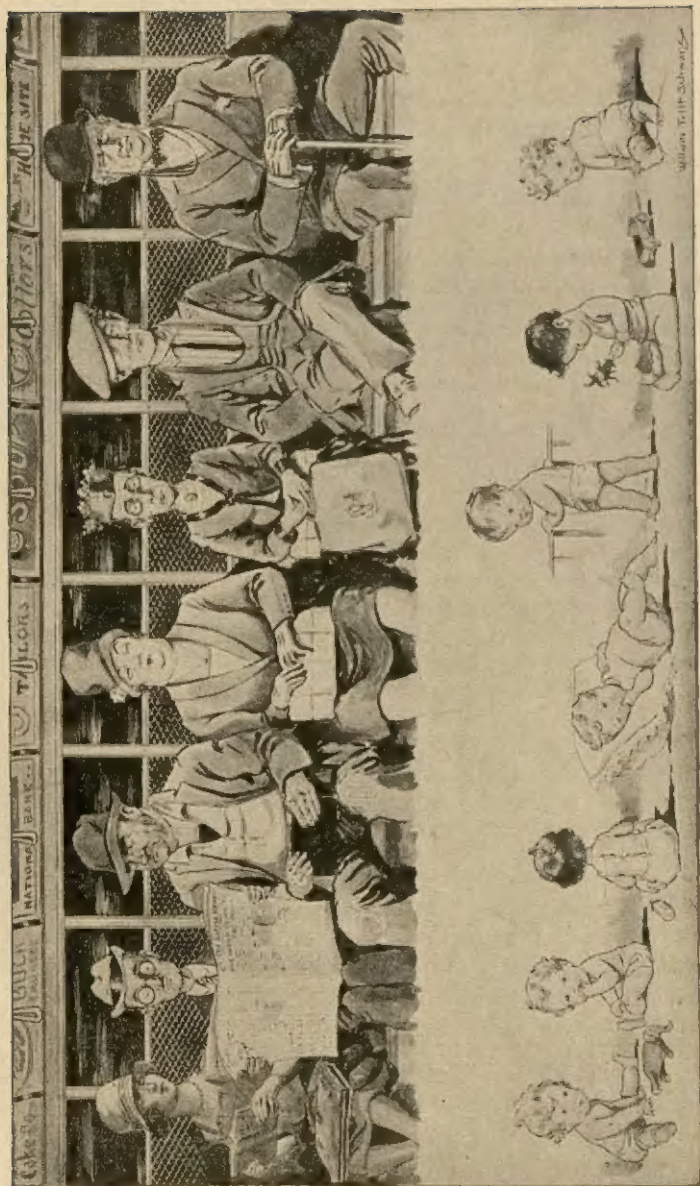


THE PSYCHOLOGY OF
ABNORMAL PEOPLE



HAVE YOU EVER CONSIDERED THEY WERE ALL ONCE UPON A TIME—
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THE PSYCHOLOGY OF ABNORMAL PEOPLE

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A revision of John J. B. Morgan's
The Psychology of Abnormal People



LONGMANS, GREEN AND CO.

NEW YORK • LONDON • TORONTO

LONGMANS, GREEN AND CO., INC.
55 FIFTH AVENUE, NEW YORK 3

LONGMANS, GREEN AND CO. LTD.
6 & 7 CLIFFORD STREET, LONDON W 1

LONGMANS, GREEN AND CO.
215 VICTORIA STREET, TORONTO 1

132

MORGAN

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THE PSYCHOLOGY OF ABNORMAL PEOPLE

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PUBLISHED SIMULTANEOUSLY IN THE DOMINION OF CANADA BY
LONGMANS, GREEN AND CO., TORONTO

FIRST EDITION FEBRUARY 1948
JUNE 1949, SEPTEMBER 1950

Bureau Ednl.	Research
DAVID HA	COLLEGE
Dated	28.3.55
Accs No 713

Printed in the United States of America
VAN REES PRESS • NEW YORK

PREFACE

Before his untimely death in 1945, Professor Morgan had prepared an exhaustive bibliography and brief outline for this revision, both of which indicated that he planned extensive changes to bring the material up to date. He had written two chapters and fully outlined the third. Chapter I appears in this revision exactly as he wrote it; there are only minor changes in Chapter II; and his outline has been largely followed in Chapter III. From there on the revising has been my responsibility, and I have assumed it with the full knowledge that I cannot do it as he would have done it, but I have tried to maintain his point of view as I saw it evolve after the writing of the second edition.

The aims of this edition do not differ significantly from those of former ones. We hope to interest students in abnormal behavior so that they may both (a) understand abnormal people better and (b) understand some of their own normal behavior through seeing exaggerations from the normal in bold relief. Furthermore, elementary knowledge of the descriptive diagnosis, dynamics, and treatment of abnormal people can very well be a part of the cultural appreciations of an educated citizenry. It is to those students who wish a well-rounded education that this textbook is primarily addressed, and for that reason we have made the presentation as clear and independent as possible of the presumption of the student's technical knowledge of other fields. We have not intentionally avoided the use of proper terminology where applicable and a part of a first course in abnormal psychology, but we have endeavored not to assume extensive background in biological, physical, or medical sciences. This is a textbook in psychology rather than psychiatry, and an introductory course in general psychology is assumed if the material is to be most meaningful.

We have been able to include many more experimental

and better-controlled clinical observations in this than in the previous editions, as might be expected from the large amount of research that has gone on in the past decade, especially in testing dynamic concepts. Some of these findings have required modification of some of the statements in the last edition, which were of necessity based on inadequate research information; we were glad we could make such corrections. And we know that there will be more as our present hunches are tested in the laboratory and clinic. Otherwise, revisions, especially extensive ones such as this, would be unnecessary.

I am greatly indebted to many people. Mrs. John J. B. Morgan gave generously of time and interest in many ways. Professor Frederic B. Knight made valuable suggestions and added both psychological and editorial insights. To Professors A. R. Gilliland and Robert H. Seashore I owe much for, with Professor Morgan, they influenced my psychological training perhaps more than anyone else. For specific suggestions, criticisms, and reading parts of the manuscript my gratitude goes to Dr. Phyllis Wittman of Elgin State Hospital, Professor A. R. Gilliland of Northwestern University, Professor Jean Harvey of Purdue University; and for more general discussions to Professor Charles R. Strother of the State University of Iowa, my colleagues at Northwestern, Professors William A. Hunt and George K. Yacorzynski, and my colleagues at Grinnell, Professors Mack T. Henderson and Charles C. Perkins, Jr., and President Samuel N. Stevens. For secretarial assistance, thanks are due and gladly given to Misses Anne Royal, Shirley Simanski, Juanita Briese, Jean MacVeigh, and Gloria Laurie. Last, but by no means least, I express deep gratitude to my wife.

GEORGE D. LOVELL

Grinnell, Iowa
May, 1947

PREFACE TO SECOND EDITION

Two objectives were kept in mind in revising this book. The first was to give proper weight to all significant recent research in the field of abnormal psychology and the second was to increase the clarity of the presentation.

An increasing amount of relevant scientific research is being conducted in psychology, physiology, education, and medicine and the resultant laws are being formulated with greater precision. Creeds, schools, and cults are naturally giving way before this development and need claim less attention from the student than clinical, experimental, and factual materials. The aim has been to interest the student in the scientific aspects of the subject and to stimulate him to think for himself rather than to subscribe to any school of thought.

The experience of numerous students has demonstrated beyond much doubt that an excellent way to study normal human behavior is to study such behavior in distortion or in exaggeration. When the abnormalities in human mental life are discussed as aberrations of normal traits, as we have consistently done in this book, the study of abnormal psychology becomes an excellent way to give the students an indelible knowledge of the laws of mental health. We hope that this revision makes the book more accurate, more scientific, more interesting and clear, and makes it a better guide for the study of mental health.

We are deeply indebted to Professor Frederic B. Knight for his many excellent suggestions as to the presentation of the material, and to Miss Ruby Gerhardt for her help in the final shaping of the manuscript and the reading of the proof.

JOHN J. B. MORGAN

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THE PSYCHOLOGY OF
ABNORMAL PEOPLE

CHAPTER I

HOW TO UNDERSTAND UNUSUAL PERSONS

One Monday morning an eight-year-old girl came to school bright and early and took the occasion, before the other children arrived, to have a heart-to-heart talk with her teacher.

"You don't know where I slept last night," she began.

"No, where?" answered the teacher, snapping at the child's bait.

"Under Mrs. Jones's porch."

"Why in the world did your mother permit you to sleep in such a place?" the teacher asked.

"Oh, she did not know it."

"Did you run away?"

"No, mother ran away. She went off and took baby brother with her and left me. When I got home from school on Friday she was not there and the house was all locked up, so I had to stay outside."

As the teacher showed more and more interest and as she asked more and more questions, the child added a wealth of details. She said she had spent the entire time between Friday afternoon and Monday morning roaming from place to place. She slept Friday night in an abandoned basement, Saturday night in a big box in the alley behind a department store, and Sunday night under a porch. She had eaten fruit stolen from street venders supplemented by some "awful nice" things which people threw into their garbage cans. Finally, in spite of the fact that the child insisted that there was no one at her home, the teacher went to the telephone and called. The woman who answered said that she was the child's mother and assured the teacher that she had been home the entire week end. She told the teacher that her daughter had eaten a hearty breakfast and had left for school not more than fifteen minutes before.

I. UNUSUAL PEOPLE

Some unusual people seem queer, some are interesting, some please and some shock us, some we shun and some we praise; hence the attitude of the student influences his investigation of such persons. The first requisite for understanding in the field of abnormal psychology is impartiality. The student should strive to substitute objectivity for prejudice where that is possible; and then to continue to make allowances for his own feelings when these cannot be overcome.

1. **Varied interpretations of identical conduct.** What is your reaction to the preceding story? If your major interest is in human morals, you will probably be shaken at the idea that a little girl could be so untruthful. If your dominant interest is genetics,¹ you may wonder whether the child could have inherited a tendency to lie. If you are primarily interested in bodily structure, you may begin to think about a defective nervous system, glandular imbalances, organic inferiorities, and the like. If you are a staunch environmentalist, you may be incited to ask questions about the sort of training the child has had. Or, if you have a certain sort of intolerance, you may be satisfied with calling the child some disparaging name, such as liar, daft, balmy, pervert, or the like.

This illustration is designed to show how impossible it is to study abnormal individuals in an atmosphere of pure detachment. Both emotional and intellectual tastes set the stage for a biased interpretation. We have little trouble in contemplating, impersonally, the individual differences in such objects as rocks and chemicals; but close scrutiny of peculiar persons is disconcerting because we all know that, in some way at least, we ourselves are a little peculiar. Thus, it is easy to understand why the story of this little girl's fantastic untruths arouses personal reactions; it comes too close for real comfort to our own tendencies to distort the truth.

2. **Personal gains from understanding others.** Why, then, should a person study a subject that arouses his personal prejudices? Why not stick to the study of inanimate objects or impersonal events? If the only result of the study of abnormal psychology were the irritation of the student's wounds, the average man might better avoid the subject and reserve it—and others like it—for prospective physicians and

¹ A glossary of technical terms will be found in Appendix II on page 643.

scientists. This is an academic argument that has been disproved by the experiences of great numbers of students. Actually, the insight a student gains of the nature and significance of mental disorders is extremely worth while, and the rewards of study will more than repay him for some slight startle effect he may experience at the first encounter with unusual persons. Truth is not very important to a man who has never come in contact with a lie or a delusion; beauty is not very thrilling to a person who has never seen anything sordid; and health (either mental or physical) may seem unimportant to the person who has never seen or experienced illness. Accurate knowledge of the unpleasant possibilities in life enables one to plan intelligently so that shocks may be avoided. Even if the ignorant man seems happy, he is living in a fool's paradise. A person may ignore, until it is too late, the essential knowledge about hygienic and happy living, only to discover that he has become the victim of his own ignorance. It may be all right to relegate the intricate details of mental disorders to the medical man, but the ordinary mortal should know enough about the subject to enable him to live in such a way that he will not find it necessary to consult a psychiatrist. (Middleton, 41)²

3. **Intolerance of unusual persons.** Our initial task of achieving objectivity will become easier if we examine some of the reasons for intolerance. Of course, few persons admit that they are intolerant because this trait happens to be in bad repute. Instead, they hide their intolerance under a cloak of righteous indignation, a social sense, an appreciation of personal values, and the like. By such self-deception, they delude themselves into thinking they are being magnanimous in their attitude toward unusual behavior, they pretend to have the general good of mankind at heart, and insist that the victims of their lofty judgment deserve the punishment, the ostracism, or the reformatory procedures they would impose on them.

As a matter of fact, in most instances, intolerance is based on a procedure that psychologists have called projection. This is the ascription by an individual to other persons of

² The names and numbers in parentheses throughout the book are to references at the end of each chapter.

feelings, attitudes, experiences, and impulses similar to his own. Thus, if a person has been brought up to be meticulously clean, he has an intolerance of dirty individuals. Seeing another person taking apparent delight in filth affects him in precisely the same manner as would his own defilement. The factors we hate most in ourselves are the bases for our most extreme intolerances of others.

Conversely, the factors we most admire in others are those we desire to cultivate in ourselves. Praise of another person is very likely to be either the admission that the praised individual is in the same class with the speaker or that the praised trait represents some ideal cherished by the speaker.

4. Sensitivity to personal peculiarities a guide to wholesome adjustment. Now, if handled properly, the recognition of the basis of intolerance (as well as of undue esteem) of others can be used advantageously. The more a person fears that he may possess an undesirable quality, or the harder the fight he has had to subdue some hated impulse or to break some obnoxious habit, the more sensitive he becomes to the presence of such a quality, trait, or habit in another. Likewise, the more successful a person feels over the development of some desirable feature, the more pleased he is when he sees that trait in another. Consequently, a man can measure his own adjustments by being candid with himself as to the degree and nature of his positive or negative sensitivities to others. The only precaution he needs is to remember that the degree of his sensitivity is a reflection of his own inner life and that he must not depend upon it in judging others.

To state the issue in a more concrete form: When you find yourself saying or thinking some such thing as, "I cannot stand her blankety-blank-blank," you have rendered no considered judgment upon the person criticised; you have simply revealed that you are sensitive about "blankety-blankness" in yourself.

II. CRITERIA OF NORMALITY

What is meant by normality? Having fixed on some criterion of normality, should each individual attempt to become normal; or is there an advantage in being unique? An examination of various conceptions of normality will make it clear that there is no sharp line of demarcation between normality and abnormality and that the attempt to classify individuals on this basis is futile.

5. Normality basically a statistical concept. The normal person is the regular person, the one who is like the great majority of others, the one who is average. This is the essential meaning of the term, and there are reasons why it will be well to adhere pretty closely to it in our approach to the study of abnormal individuals. To express this in other terms, we can say that the normal person is one who is within the central area of a distribution curve representing the trait or characteristic in question.

For example, suppose we ask who is normal in height. The answer to such a question does not depend upon opinion or the standard set up arbitrarily by some individual or some board. It depends upon established standards, based upon the results of actual measurements of the heights of numerous individuals selected at random from a population. Such measurements will show that, for our United States, less than 1 per cent of the male population will be shorter than 54 inches, or taller than 80 inches; 90 per cent will fall somewhere between approximately 60 inches and 75 inches; and 50 per cent will fall between approximately 65 and 70 inches. Now, what can be said about a man who is, let us say, 67 inches tall? We can say that he is within the middle group of 50 per cent of the population; a statement that is much better than to say he is normal. What about a man who is 80 inches tall? Would it not be better to say that it is unlikely that more than 1 per cent of the population would be taller than he than to say that he is abnormally tall? But if someone prefers to use the terms normal and abnormal, where should the line of demarcation be drawn? Should normal include the middle 50 per cent of the population, the middle 75 per cent, the middle 90 per cent or the middle 99 per cent? The only answer is that the location of any dividing line is a matter of personal preference.

6. No clear-cut distinction between normal and abnormal.

Some persons have the erroneous notion that there is a sharp differentiation between normal and abnormal. Such a view might be represented by the left portion of Figure 1. The

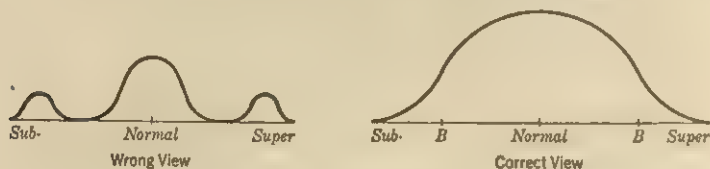


FIG. 1. RELATION OF NORMAL TO ABNORMAL

The figure at the left indicates a commonly held misconception of the distinction between normal individuals, and sub- and super-normal individuals. We do not find the sharp distinction between the three groups that this graph indicates. The actual situation is represented in the graph at the right. Since the height of the curve represents the number of persons at each point on the base line, it may be seen that the greatest number of individuals are between the points marked *B*, which may be used to represent arbitrary border-lines between normality and abnormality. A few extreme cases are found at each end of the distribution curve beyond these lines of demarcation. It should be clearly noted that the position of *B* on the base line is arbitrary and depends wholly upon the judgment of the individual who attempts to place it. There is no sharp distinction between normal and abnormal

representation in the right portion of the figure is more nearly correct. There are all degrees, from the most subnormal to the most supernormal. If we assert that those persons falling between the two *B* points represent the normal persons in such a graph, we are making an arbitrary statement, for no one can tell us just where we should place these points. (Taylor, 54)

In the field of mental adjustments, we have no way of measuring the degree of balance a person possesses, we have no way of making a distribution curve or of fixing percentages within different ranges of balance. Hence, the task of deciding who is mentally normal and who is mentally abnormal becomes even more impossible than the task of finding who is abnormal in height. Furthermore, the position of any one person is not fixed on any hypothetical scale of mental balance. Any life history will show that an individual may move from one position to another. At one time he is better adjusted than at another. For a time he may appear to be disintegrating and then show a marked change and make a remarkably successful adjustment. On the other hand, one

who has been adjusting satisfactorily may break when some series of influences changes the balance of forces. (Skaggs, 51)

Some persons are relatively immune from disintegration—it takes a tremendous jolt to upset them. Others are constantly in a state of such unstable equilibrium that it takes but a slight shock to disturb their balance. Such individual differences are extremely important in any consideration of mental disorders, but they should never be regarded as fixed entities. We can never assume that a person will remain the same from moment to moment.

The important point is that it is well to refrain from the urge to decide whether a certain person is normal or abnormal. Instead, study him as an individual and learn the significance of his peculiarities. Since some persons object to this advice, it may be well to examine some of the effects of rejecting it. (Wegrocki, 59)

7. Erroneous identification of normal with ideal. Many persons identify normal mental balance with something close to perfection. Either knowingly or unwittingly, they argue that mental life is too important to be tarnished by compromise.

Such a conclusion is based on an underlying notion that life is static; the aim is to develop some fixed quality that can be pointed out as the result of an individual's heroic endeavors. Such a notion has no basis in fact. Life is, from beginning to end, a struggle, a fight to exist. Few of us go through this struggle unscathed. Some meet the simpler entanglements only to succumb when the situation becomes more complicated. Some are able to keep the major part of their personalities intact, yet show the marks of the conflicts they have encountered. No two persons meet a difficulty with the same reactions, and the effects of an encounter are different with different persons. Some adjust easily, whereas others seem to have an especially hard time in meeting life's exigencies. (Shaffer, 49)

The idealist would draw a line between success and failure in this struggle; but how can any judge decide when a person has failed in life's struggle? No dogmatic answer can be

given to this question. There are no perfect successes and no perfect failures in life; adjustment is entirely a relative matter. (Foley, 18)

It is not fitting for the student to pass judgment on any person he may study. Let him have high ideals for himself; but critical judgment of others is not the essential or even the desirable concomitant of high standards for one's self. The idealist's conception of normality has no place in our study.

8. The pathological view of normality. Nor should normality be identified with freedom from disease. Because a diseased person is usually different from one who is not diseased, it does not follow that any abnormal individual is diseased. The student of abnormal psychology should divest himself of the tendency to indulge in this logical fallacy—a fallacy that is all too common.

The causes for this error in thinking are probably numerous, but two stand out. One is the attitude taken by some psychologists that the science of psychology should be devoted exclusively to the normal man. The best argument against any such opinion is an examination of the contributions to the field of psychology made by studies in the realm of the unusual. In the natural sciences, crucial experiments are performed by isolating certain factors for controlled observation and manipulation. In the field of psychology, abnormal events and unusual individuals have provided ready-made experimental setups that it is sheer folly to ignore. The contributions made by studies of unusual individuals have been enormous.

The second factor that has made for the identification of the abnormal with the pathological is the fact, which psychologists are rapidly changing, that a great many of the contributions in the field of abnormal psychology have been made by medical men. The medical man deals primarily with pathological conditions and naturally he tends to consider all abnormalities unwholesome. In this connection, one physician has suggested that the concept bionegativity be substituted for the concept abnormality: bionegativity implies some condition that disturbs in a harmful manner the total functioning of the organism. (Angyal, 3) As a matter of fact, some of

the finest performances made by man have involved the suppression of the total functioning of the organism, and some of the acts that, at the moment, seemed to be most unusual have turned out to be the most sagacious. History has honored many men who were called "screwballs" by their lay contemporaries and psychopaths by their physicians.

The unwary person may easily follow the pattern laid down by the medical man and restrict the concept of abnormality to those who are inferior in some manner. (Skaggs, 51)

To encourage the student to avoid any such tendency it may be well to point out that the identification of the unusual with the ill represents a sort of professional or personal intolerance that the study of abnormal psychology should try to eliminate. The smug tendency of the self-styled normal man to ostracize the abnormal person, until he learns to conform and be just like the run of mankind, is unwarranted. (Sarbin, 48) A dwarf may perform a task that would be impossible for a man of average height, as has been discovered in the manufacture of airplanes. An abnormally tall person may make an excellent forward on a basketball team. And who of us would complain were he a genius? The motives of the person who would prove that a genius is pathological might well be suspected. In short, each one of us has a perfect right to be peculiar in his own fashion; the only two checks that are needed to prevent the misuse of this right are the possibilities that we may do ourselves some sort of harm or that we may become obnoxious to others. The first task of the student is to understand the abnormal individual, whether such a person is considered pathological or not, whether he is socially acceptable or not, whether he is making no contribution to the welfare of mankind, making an unusually fine contribution, or whether he is doing harm or good. These evaluations all have importance in their place, but they should not be permitted to cloud the vision of the student whose main purpose is to understand. (Cattell, 12)

III. SOURCES OF INDIVIDUAL DIFFERENCES

Mental difficulties arise from peculiar combinations of factors rather than from single causes. The understanding of the unusual individual involves a relative evaluation of diverse extraneous factors as well as an understanding of the effects upon the individual of his own reactions to life's inevitable conflicts.

9. **Interrelation of causal factors.** It is very easy to make the academic admission that any event is caused by a multiplicity of factors and then, in a specific situation, tend to look for one outstanding cause. Still more dangerous is the tendency to look upon causes as fixed items to be summated. The various factors behind any mental adjustment contribute by interacting with each other and not by being added to each other. An illustration may clarify this issue.

When John was three years old, his mother was taken to a hospital for mental diseases and remained there for the rest of her life. From that time on the boy lived with his father and grandmother. The grandmother and John did not get along very amicably; she would scold him and tell him that he was just like his mother and that, if he did not behave, he would "go crazy" just as she had done. The father was an irascible fellow, and one day, in a fit of anger because the boy had interfered with his farm work, he whipped him brutally and rolled him in a manure pile. Similar episodes were by no means infrequent. John later married a dictatorial and frigid woman, who humiliated him on every possible occasion and characterized his boyish attempts at affection as bestial. At the age of twenty-five this man broke and had to be taken to a hospital for mental diseases.

Why did this man break? Was it because he inherited a tendency from his mother? Was it the training during the first three years by a psychopathic woman, his mother? Was it due to the fears implanted by the comments and threats of his grandmother? Was it due to the hatred aroused by the vicious treatment of the father? Or, was it because of the thwarting and ridicule of his frigid wife? This is the way in which questions are usually asked about such persons, but the very asking of them is incorrect. They imply an answer that would designate the relative contribution of each factor.

But the dynamic growth needs to be viewed in entirety if the situation is to have meaning. Each episode made John more vulnerable so that he finally went to pieces. It is easy to see how, at any point, a change in the pattern of living might have resulted in something quite different. (Miles, 42)

Hence, when we speak of different factors as contributing to the adjustment or maladjustment of an individual, we should think of each as vital in changing the pattern of living, or the course of life, and never as adding so much weight, or filling some sort of receptacle, until the individual can stand no more. A better way to visualize dynamic living is by thinking of a person going in various directions and at various speeds. By changing influences, his speed may be accelerated or retarded or the direction of his movement may be changed. Such a picture of a living man is preferable to the analogies so commonly heard—either that a man is like a tank that can take only so much without running over, or that he is like a piece of metal that can endure just so much stress before breaking. (Sarbin, 48)

If we have completely absorbed the significance of viewing an individual as a dynamic, growing, changing organism in the continual process of adjustment and readjustment, we can take a bird's-eye view of some of the groups of forces that may contribute to the speed and directions of his movements.

10. **Hereditary and environmental factors.** Heredity provides the material with which an individual begins life and, by means of such a contribution, has some influence in the direction of that life. However, the initial direction can be and is modified by other influences. In some instances, the initial impetus is strong enough to remain quite strong but, even so, changes may be effected. For example, the fact that we inherit legs and feet, as we do, makes it quite likely that we will walk as human beings walk. But, if the need were vital enough, it would be possible to train people to walk on their hands instead of their feet, to walk on all fours, or to hop instead of walking. That is to say, we do not need to be enslaved by heredity. We are often prone to assume, because some hereditary tendency can be discovered, that the resultant course is fatalistically certain.

Such a fatalistic attitude is often a means for covering our inability to direct an individual properly. When he persists in maintaining a course that is not to our liking, we are prone to ask how one could expect more in view of his inheritance, whereas when he responds to our influences we take pride in the excellence of our educational techniques. Heredity exercises a directive influence on a man's life, but it does not doom him to a certain end. Man's greatest glory lies in the fact that he has used the brain heredity gave him to invent devices to circumvent hereditary limitations. The wing structure given by nature to a bird makes it easy for him to fly, but man has invented artificial wings to accomplish what nature has denied him.

Moreover, it has not been demonstrated that mental diseases are strictly dependent upon hereditary factors. In instances where certain mental conditions run in families, the effects of environmental influences have not been successfully ruled out, and the consequent conclusion is that we know very little about the specific way the different components interact in producing the abnormal condition.

In view of these considerations, a common-sense view of the situation would be as follows: Each individual should be studied to determine the direction in which he is moving, whether toward mental health or toward mental disease, and, if the latter, the nature of the threatening disorder. We should know as much as possible about present, available influences and their relative potency in modifying the direction of the individual. Even if we suspect that hereditary factors are somewhat responsible, we should stress the present means of influence instead of using heredity as an excuse for dooming the individual to continued mental disease. The fact that a man inherits a wart on the end of his nose is no excuse for leaving it there; neither should the influence of an hereditary factor be permitted to function unaltered if it would lead a man to mental disease.

II. Structural disorders versus disorders of adjustment. Mental disorders that stem from some defect or injury to the nervous system have been variously called organic or structural. These have been contrasted with those for which no structural condition can be found; the latter have been

called functional disorders, reactional disorders, or disorders of adjustment. As to the existence of these two general groups there is little controversy, but there are various attitudes taken toward the significance of this differentiation. (Sherman, 50)

First, there are those who believe that there must be some structural difficulty behind every behavioral disorder. They point to the fact that damage to the nervous system by direct injury, by poisons, by hormones, by temperature changes, and the like can bring out queer mental processes in an individual. They then point to the unusual behavior of those persons in whom no signs of an organic condition can be found and argue that the latter differ from the former only because of our ignorance of all the facts. They have implicit faith that ultimately we will find a suitable organic explanation. One cannot argue with their faith, but such hope should not be mistaken for logical evidence as to the truth of their position. (Bentley, 6, pp. 112-113)

Second, there are those who maintain that a person with a perfectly normal nervous system may learn to use it in such a way that his behavior may become distorted to such a degree that he may be considered pathological. (Levine, 35) Usually, those who give this emphasis do not argue against the possibility of damage to the nervous system producing an upset in behavior. They merely contend that queer behavior is no logical ground for assuming physical damage to the nervous system. (Cannon, 11) Instead of resting on the excuse of ignorance backed with the hope of ultimately dispelling such ignorance, these persons have instituted an active hunt for other ways of explaining behavioral disorders.

The proposition really boils down to this question: Is it possible for a person to utilize a perfectly sound organism in such a manner that he may become completely out of adjustment—so far out of adjustment that he can be said to have a mental disease? (Horney, 26)

A simple illustration may clarify the issue involved. Suppose a little girl is found who spells the word separate with an *e*, thus, seperate. Should we assume, with the organicist, that some structural change has occurred in her nervous system—that she has taken in some poison, that she has ex-

perienced a blow on the head, that some hormone imbalance has occurred, or that she has inherited some structural defect? Or, if we cannot locate some organic factor, are we justified in contending that we are simply ignorant of what the structural basis may be, but that there must be one? Would it not be better to say that she learned to spell this word incorrectly? We do not need to deny that specific cases might be found where a person learned to spell such a word correctly and then began to misspell it after a structural accident; but such an instance does not prove that a child with a perfectly normal nervous system could not have learned to spell the word incorrectly. Hence, to look for an uncommon cause in every case where the phenomenon can be more simply explained by an everyday type of experience—incorrect learning—seems gratuitous. We may not have the remotest notion of how the child learned to misspell this word, we need not assume some queer emotional pattern, we need not locate the guilty teacher or the dull companion who misled our patient. All we need to do is to observe the symptom, start out with the assumption that she has not learned properly, and then take the common-sense approach to treatment—teach her to spell separate with an *a*.

The time to look for more complicated reasons for a peculiarity is when teaching fails to produce results. We may have to dig out some other factor than straightforward learning, but there are complicated agents in learning that may have played a part, or are still operative. For example, the child may have found that poor spellers get more love than good spellers, she may have learned to enjoy teasing others by spelling badly, she may have some unrecognized and unconscious attitude built around the sound of certain letters. But, even if we cannot teach her to spell correctly, we are not warranted in assuming that her trouble is organic; indeed, there are as many functional conditions that we are ignorant about as there are organic conditions. To extend the argument further, we have no right to assume that the child was born feeble-minded, that she has acquired some brain injury, that she has been poisoned. All we are logically justified in saying is that this child has a difficulty in spelling this word, that she does not respond to our instructions, and that we do not

know what the cause is or why she cannot learn. In short, the scientist gets farther by admitting his ignorance than by giving pseudo-explanations. Furthermore, the scientist hampers himself, if he confines admitted ignorance to one area. If he says that his ignorance of the cause means that there must be an organic cause, he is blinding himself to other possibilities.

12. The mind-body issue. The foregoing distinction between organic and behavioral disorders should not be confused with the philosophical controversies about the relation between mind and body. If a person assumes that mind and body are two separate existences, he has the task of explaining their relationship in some way. Since the concepts of mind and body carry with them the assumption or implication of two separate entities, it is better to avoid these terms and to adhere to the concepts of structure and function. Philosophers have written many volumes in the attempt to rationalize the interrelationship of a separate mind with a separate body. The relationship between structure and function is a common-sense one, easily understood.

Perhaps an analogy will clarify the issue. The physical structure of a machine is a prerequisite for its functioning, and physical damage to the structure of the machine may disturb its proper operation. But a perfectly constructed machine may function improperly because the parts do not articulate properly in space or timing, that is to say, it may be out of adjustment. For example, a gasoline engine may fail to operate properly because the carburetor is flooded or because the mixture is too lean. Does the mechanic repair such a functional disorder by performing an operation on the structure of the engine? An honest mechanic does not. He may merely point out to you that you hold the choke out too long, or he may adjust some valve so that the mixture is richer. The vulgar expression that an abnormal person has a "screw loose" really shows popular understanding of the true nature of a functional disorder—the individual needs some sort of readjustment to a perfectly sound organism.

But there is another interesting aspect of this relationship between structure and function. It is possible to get a machine out of adjustment and to continue operating it under such

conditions so long that it may become physically damaged. For example, change the timing of an automobile engine, or mix up the firing order of the cylinders and continue to run it in spite of the symptoms it manifests, in choking and sputtering, and severe damage may be done to the engine. Similarly, a person may become chronically irritable because of some uncorrected circumstance. This irritation may upset the digestive reactions and the secretory operations involved to such an extent that stomach ulcers may develop.

Such structural injuries as a result of chronic functional maladjustments have led to the development of a branch of study that has been given the name of psychosomatic medicine. The name is unfortunate because the root meaning of the term is mind-body medicine. However, we can accept the fact that function may affect structure, and that structural changes may affect function, without becoming involved in the mind-body controversy. (Menninger, 40)

IV. SYMPTOMS OF MENTAL DISORDER

The language of behavior is one thing the student of unusual individuals must learn. This language has peculiarities that complicate the learning problem. Some of the symbols are straightforward; some are in code. The codes are not fixed but change at strategic times and places in a most disconcerting manner. These complications add zest to the pursuit of meanings, for the scholar can never be sure he has the final answer and can never settle into complacency.

13. The logical significance of symptoms. Every bit of a person's behavior (or every failure to act) has meaning, but it must not be supposed that such meaning is easy to extract. In fact, just the opposite is true, and the student is often impelled to excuse his failure to interpret the behavior of abnormal persons by saying that it is absolutely senseless. Let us begin by admitting that this is a silly and egotistic defense. It is tantamount to asserting that, because I am unable to solve a problem, the problem cannot be solved. It will do no harm to assume that there is some meaning in the most peculiar conduct even though none of the clever persons who have worked in this field in years gone by have been able to write a lexicon of abnormal acts.

Symptom interpretation is a form of inductive reasoning,

which is the type of logic most extensively used in scientific research. The vague curiosity of the student induces him to focus his attention on a limited type of data, in our situation, on the behavior of human beings. The mass of material to be observed is very confusing at first, but certain relationships seem to appear and the student, thereupon, begins to group certain materials together. As he proceeds in such closer scrutiny and classification, various suggestions come to him that seem to explain certain aspects of his observed materials. These are hypotheses. These he begins to test in various ways. Some he soon rejects; some others seem to hold water. He grows to favor some and to shun others. After a time, he may find that his first judgments were right, or he may find that he was wrong; it may be that the hypothesis he so readily rejected turns out to be correct and he must reverse himself.

Now, it happens that investigators are different in their tastes and temperaments, and each usually contributes to this whole pattern in his characteristic fashion. Some have a yen for gathering data, some have an aptitude for classification and organization, some have an uncanny ability to evolve explanatory hypotheses; and others have the dogged persistence that enables them to contrive and labor on extensive experiments to test the truth of various hypotheses. Each contributes his share to the general advancement.

The beginning student can profit from all. At spots throughout the text we shall describe symptoms that have been observed, but whose meaning is still a mystery. There will be other places where theory seems to flourish with little experimental verification for conflicting views. At other points, we shall find that experiments have been performed to clarify some issue that may appear relatively unimportant. These variations in stress are indices of growth. All of these aspects are stimulating in the field of abnormal psychology. Even if a symptom is not understood, it still is a challenge to the observer; even if there are conflicting hypotheses, they all have some facts to support them; and there is probably no branch of psychology in which experimentation has been more ingenious.

In a field of study that is progressing as rapidly as is the field of abnormal psychology and where there is still so much

to be learned, it is well to suspend judgment, to keep alert to new symptoms and to different interpretations of old symptoms, to avoid complacency and adherence to any one viewpoint, and to endeavor at all times to maintain an adequate perspective. (Hunt and Landis, 28)

14. Interpretation of symptoms. Even the simplest human acts lend themselves to different possible interpretations. Suppose we see a man walking down the street; we can see the simple objective act, but that is the least important part of the meaning of the man's behavior. He may be on his way to church, to commit a murder, to propose to his sweetheart, to buy an insurance policy, to join some political intrigue, or he may be on any one of a thousand errands. To the fact that he is walking the observer (either consciously or unconsciously) adds certain other bits of information; for example, it may be morning, the man may be carrying a lunch box, he may be dressed in working clothes, he may have been seen going over the same pathway other mornings at the same time, and other similarly dressed individuals may be hurrying down the same street. Putting all these bits together, it is easy for the observer to assume that the man is going to work. Furthermore, the pedestrian may be exhibiting less apparent aspects. He may be frowning or smiling, he may be walking fast or slowly, he may be alone or with others, or he may be manifesting even more subtle signs for the one who is alert to see them. But the different aspects of the total situation that are noted, the importance attached to these, and the interpretation given to the whole pattern will depend upon the specific emphasis of the observer. In opening this chapter it was pointed out that the same facts will be interpreted differently depending upon personal bias; but even when an observer tries to ignore what he considers personal bias, his interpretation will depend upon previous training and earlier interpretations of similar situations and incidental trivia.

15. The choice of symptoms. Another aspect of symptoms, which it has taken scientists a long time to recognize, is the fact that the patient is taught to utilize a particular symptom, or pattern of symptoms, by the very persons who are trying

to help him adjust satisfactorily, that is, primarily by his parents, his teachers, and his physician.

The question has often been asked, why does one patient develop one set of symptoms whereas another, with the same difficulty to overcome, develops quite a different set? Why does not a particular type of situation initiate a symptom appropriate to it? The answer is that each individual, especially in childhood, gets his cue of how to act from those who associate with him, and he gets it through the simple process of learning.

An illustration may make this point clear. A girl, twenty-five years of age, came to a psychiatrist with the complaint that she had developed a queer type of nausea. It was queer because it did not seem to result from any particular food she ate, from any overindulgence, nor did it come at any particular time of day. It seemed at first to be entirely erratic until she discovered that it came only on Sundays and on Friday evenings. She was a member of the church choir. Choir practice came on Friday evening. So she watched more closely and observed that if she stayed away from choir practice or did not go to church on Sunday, and so did not sing in the choir, she did not get ill. She thought that singing could have something to do with it, but she went to a girl friend's home and a group of boys and girls had a sort of family sing in which she joined lustily, with no sign of nausea. Since the whole thing did not seem to make sense, she sought professional help to solve her problem.

Through means that we need not describe here, it was found that she was engaged to a boy who was overseas. She was loud in her protestations of unwavering devotion to him. But there was a very charming boy who sang in the choir. She did not pay much conscious attention to him, but she began to become very uncomfortable at choir practice and in the choir loft on Sundays. The discomfort increased until it became an actual nausea and she had to stay away. She was unwittingly fighting against any response to this boy, and the end result was so much discomfort that she stayed away altogether.

The situation might be stated somewhat as follows: She

was having a harder time remaining loyal than she thought, and she became afraid that she might weaken. Consequently, any suggestion of disloyalty filled her with a vague discomfort. Not recognizing the real cause, she merely knew that she became more and more uncomfortable under certain circumstances and that she obtained relief when she avoided these conditions. A girl with more insight would have realized the true situation and would have made a conscious admission that the boy in the choir was attractive and then would have gone about her business with an even greater determination to remain loyal.

What did our patient do? She refused to face the issue at hand. Instead, she turned the solution of her problem over to her internal viscera and permitted the degree of tension or relaxation of this part of her anatomy to decide what she should do. Finally, her stomach virtually said, "Old girl, since you are afraid you can't trust yourself, you just stay away from the choir. If you don't, I'll see to it that you do."

The point that confronts us is, how did this girl ever get into such a situation that she refused to face such a simple issue, relegating the decision to her stomach instead of using her brains to solve her problem?

Her condition was not the result of any great crisis in her life; she had suffered no violent experience to get her into this state. She had learned it in the same manner that any habit is learned by starting off simply and then repeating similar actions over and over again until she had established a habit of evading decisions by becoming nauseated.

She had the prerequisite for this learning in the form of a mother who was sensitive to nausea, a fact that the girl discovered when an infant. Most infants vomit when they eat too much or when some minor digestive upset occurs. Most mothers take this as a matter of course, provide bibs for their infants and calmly change their clothes when the bib has proved inadequate. This girl's mother, although relatively calm in practically every other situation, became quite disturbed every time her daughter vomited. She admitted that she could hardly stand the sight of it, that it almost made her ill, and that she would do anything in the world to forestall even a minor disgorgement. One day, while the little girl

was still less than two years old, she became so enraged at her mother that she screamed and held her breath with such violence that it made her retch. Immediately, the mother's whole attitude changed; she became very solicitous and the child won the battle. To be sure, neither realized what was happening, but other similar incidents through a period of years fixed the habit.

In short, the girl learned this device for winning her battles in the same manner and for the same reason that an animal learns to push the right button to enable him to escape from an experimental test cage in a psychological laboratory. In either case the first reactions are random, but become specific and established because they perform a definite service to the animal. Vomiting happened to be of service to the girl in her early life; she learned of its effectiveness by accident, but continued to use it in different settings until she became quite expert at it. She eventually learned to use it to win battles against herself just as she had used it to win fights against her mother. Instead of guiding herself through the problems of life by arriving at decisions through calm deliberations, she permitted her stomach to guide her. Her stomach became the staunch ally of her conscience. After she discovered the significance of her nausea, she learned how to solve moral problems by intellectual analysis and found she did not need the help of her stomach to keep her good.

16. Clear versus subtle symptoms. Having heard such an analysis of the significance of symptoms, some persons develop a tendency to read overcharged meanings into simple acts. Such individuals succeed only in deluding themselves and in making everybody around them uncomfortable. A person may become nauseated for no other reason than that he has eaten something he should have avoided. One gains nothing by reading unnecessary complications into a simple situation. A professional psychiatrist needs to develop a sensitivity to symbolic symptoms but there is no excuse for the ordinary man, even for the student of abnormal psychology, to poke his nose into other people's affairs and, with an air of superior wisdom, solemnly pronounce, "There is a hidden meaning in what you do or say."

It might be well to apply the law of scientific parsimony

to this situation. When a simple explanation seems adequate, avoid introducing a more complicated one. At times we can see more deeply into the pool of life when we do not stir up the mud on the bottom. When, however, the simple answer is obviously inadequate, as in the above illustration, the signal is given for deeper analysis.

17. Symptoms vary in stability. In the fact that behavioral symptoms are learned lies the explanation of tremendous variations in stability. Repetition and training are needed to fix a habit. Suppose a child conquers his mother once by vomiting, and suppose that, even though he may have tried it later on his mother and other persons, he never again succeeded when he used this device. We can hardly imagine him as an adult who would use this stratagem unwittingly on himself. A person cannot develop in a short time a mental disorder that requires years of specific training any more than a man can open a book and become a mathematician immediately, or take one fling at a piano and be an accomplished musician, or walk across the college campus and be a scholar. Some mental disorders come, of course, suddenly, from violent injury to the nervous system, or from the shock of a misfortune so terrible that it may upset a person's whole balance. To these shocks the victim makes the best adjustment he can, and the meaning of each crisis becomes clear. But when the individual repeats some act that seems queer and unreasonable, we need to get below the surface and dig out the significance of the deceiving symptom. We shall have an easier time discovering the genuine meaning of these symptoms when we keep in mind the importance of learning in their selection and fixation.

18. Symptoms as defense mechanisms. There is one sharp distinction between a response pattern that serves some ordinary purpose in life and those response patterns that we shall study as symptoms of mental disorder: namely, the ordinary pattern is usually given up when it ceases to be of value or when it seems actually harmful, whereas the symptom is retained in spite of the apparent damage it does to the one who cherishes it. Why should a person grimly hang on to an activity that does him no seeming good but that does him actual harm? It must be that he gains more by retaining the

symptoms than he would (or thinks or fears he would) by relinquishing it.

Perhaps we can illustrate how such a situation works out by giving an artificially simplified pattern. Suppose a person is tempted to go someplace where he would commit an act that would be shameful to him. He does not want to go but is continually afraid that he might be weak enough to go in spite of himself. Suppose, further, that he hurts his leg so that he must stay in bed. His temptation is gone for the simple reason that he cannot walk to the place where he is afraid he might go in a period of weakness. So, he continues to remain paralyzed in bed, even after his physical wound heals—the paralysis makes him be good. He loses a lot by staying in bed with a paralyzed leg that is not really paralyzed in the organic sense; but he gains more—he can retain his self-respect.

But such a ruse does something more. It conceals even from himself the fact that he is tempted to do the vile thing he fears. He can direct his attention to his leg, and he does not even know what purpose the paralysis plays in his life. What a tremendous loss his recovery would entail! He would be faced with a realization of his weakness, and he might even submit to it by going on his evil errand. Thus, his symptom becomes what has been called a defense mechanism, which is a device to protect a person from his own impulses and, at the same time, to act as a mask to conceal from himself the fact that he even has such impulses. (Janet, 32)

Our study will be taken up largely with a study of such devices, an analysis of how the different ones originate, the way in which they operate, and how they might be handled to enable the victim to make a better adjustment.

That the significant factor is not the mask itself must be clearly understood. The symptom may be interesting, but the important consideration is the entire life economy of the individual who finds himself forced to use such a device for self-protection. The whole process of psychotherapy is involved in ways for teaching the patient to make such adequate adjustments that he will need no mask.

A misconception may well be removed at this point. Some beginners, when they come to realize that defense mechanisms

are masks, believe that the important procedure is to strip the masks from all persons. This does not follow. A mask is a variety of clothing, designed to cover our nakedness. No one, be he physician, or just ordinary layman, has the right to rip the clothing from a person and to expose his nakedness to the world. As we shall try to show as we go along, the important consideration in psychotherapy is a strengthening of each individual so that he will not need to use masks that are too expensive for him. But, no matter how well adjusted a person is, he still needs some form of covering. Very few of us have such perfect bodies that we would qualify as fin dancers. Let no one think that studying abnormal psychology qualifies him to go around removing the psychological defense masks from people any more than the study of anatomy would justify his tearing the clothing from the bodies of his friends. Instead, our study should become a sort of course in mental designing. Provide a person with suitable garments, and he will discard his rags.

19. Symptoms not contagious. In some circles there is an unwarranted superstition that mental symptoms can be passed from one person to another in much the same fashion that micro-organisms are passed through the air or by contact from one person to another. To this superstition there is added, in the field of mental disorders, the fear that a sound person may be harmed merely by seeing a deranged person or hearing about some mental aberration. The believer in this notion usually supports his claim with some vague reference to the "power of suggestion." At a later point in this book we shall go into some detail in the study of the way in which suggestions function; but before reaching that point in our study the student should have overcome any notion he may have that symptoms are adopted merely because someone suggests them. (James, 31)

If some friend suggests to you that you rob a certain bank tonight, and then you proceed to do it, anyone knows that the suggestion was a mere incident. Before any such advice from your friend could have been adopted, you must have given the idea of theft some thought and probably were on the verge of the robbery anyhow. Otherwise, you would not have accepted the suggestion so readily. This fallacy in our

thinking comes from the fact that too much significance is given to the symptoms themselves. The common notion is that symptoms of mental disorder are terrible conditions and the main problem is to get rid of the symptom. Nothing could be farther from the truth. The symptom is adopted because it serves some purpose. If I am in desperate need to escape some difficulty and see some friend get out of a similar scrape by fainting and I take the hint and faint likewise, does this mean that symptoms (such as fainting) are contagious and should be guarded against? The whole situation merely indicates that I had a problem and that the suggestion of fainting happened to come at the right time. If the trouble had continued and no suggestion of fainting had come, something else would, and then that would have been the symptom for me. Blaming suggestion, either by calling it a form of contagion or dissecting its true nature, is putting the blame on a relatively unimportant element in the whole setup. Furthermore, it might be well to repeat the principle that no mental event results from one causal factor and that, in attempting to understand the significance of an entire affair, each contributing element must be kept in its place of relative importance. Because neurotic symptoms are queer and usually interesting this warning is often ignored.

V. TECHNIQUES FOR STUDYING ABNORMAL PERSONS

The approach of the student to the subject of abnormal psychology should be that of the scientific observer of human behavior. But the material to be studied (human conduct) is so variable, so hard to observe, and so elusive of any formulated principles that the scientific ideals and standards are hard to maintain. Some of the techniques that have been developed to overcome these difficulties are more valuable than others, hence it may be worth while to examine the special advantages and deficiencies of the most important ones.

20. **Case-study techniques.** A fifteen-year-old boy displayed an extreme and apparently unreasonable fear of dogs. Whenever a dog came within his visual sphere, he would turn pale, tremble, and if the dog came near to him, he would scream. His behavior does not appear to be so queer when we learn that, when playing in his yard at the age of four, a vicious dog attacked him so furiously and chewed him so severely that he was hospitalized for weeks. If an overdone fear re-

hypotheses; it is such a valuable technique that none of its limitations should be permitted to detract from its value. On the other hand, its worth is not enhanced by ignoring the dangers involved in its use.

As a final word, it might be well to stress the fact that a case history performs a function that will probably never be accomplished by any other technique. It stresses the dynamic element of growth in human life without which the study of the individual becomes hollow and meaningless. (Olson, 45)

21. Psychoanalytic procedures. Psychoanalytic procedures resemble case studies by directing their attention to the individual; but they differ from case studies by attempting to interpret the individual by what he himself says rather than by what others say about him. Freud gave a restricted meaning to the term psychoanalysis, and followers of Freud insist that the term should be confined to the methods developed by him and his successors, or to the body of theory advanced by Freud. (Rosenzweig, 47)

The Freudian procedure requires that the subject recline on a comfortable couch in a dimly lighted quiet room while the analyst sits and listens at the head of the couch, out of the field of vision of the patient. With a minimum of response, the analyst attempts not to give any suggestion to the patient while he recites his free associations to ideas of the moment, to his dreams, to everyday occurrences such as his slips of speech, to his errors of memory, to his attitudes and relations to other persons, that is, to anything that suggests itself to the patient. Such an interview lasts an hour and is repeated at intervals of two or three days through a period of two or three years.

But the real difference between this method and the method of case study goes deeper than their external dissimilarities; whereas a case study provides materials from which an outsider attempts to interpret the patient, in psychoanalysis the outsider remains a passive auditor while the patient studies and interprets himself. It is rather generally conceded that freedom to talk out his problems and to formulate his viewpoints has a beneficial effect upon a patient whether his own interpretations are faulty or correct.

Since the aim of all study is therapy, it would seem that

the psychoanalytic method has a better chance of success than the case-study method. In the latter, the purpose is to gather material, interpret that material, and then to treat the patient in accordance with a diagnosis that results from this interpretation by the specialist. In the psychoanalytic procedure, the patient benefits from the very process of unburdening himself, the beneficial results depending very little on whether what he says is true or false either from a factual or an interpretative standpoint.

The core of the psychoanalytic method is letting the patient talk. Practically all authorities in the field of personal counseling have recognized to some degree the value of this technique. There is a growing tendency to listen to the patient instead of talking to him, to let him tell things in his own way instead of restricting him to the answering of questions or the discussion of some set theme.

22. Tests and questionnaires. A questionnaire is a set of questions to be submitted to numbers of persons in order to obtain data on some specific subject. For example, large numbers of persons may be asked about the fears of their childhood. While much information may be gathered in this manner in a relatively short time, the method has certain limitations that must be carefully considered and used to discount any conclusions drawn from the data. The results are influenced by the selection of questions, the way they are stated, the selection of individuals to whom the questionnaires are given, the ability or willingness of the respondents to answer correctly, the ease with which the respondents can deliberately falsify answers, and the danger of error in the statistical treatment of the results. Many workers are of the opinion that these dangers more than make up for any advantages this method may have in speed and ease, and it is not as extensively used as it was a few decades ago.

On the other hand, tests seem to be on the increase in numbers and in popularity. The primary purposes of a psychological test are to reduce error and to eliminate personal factors in the selection and interpretation of personal data. Hence, in the study of some specific factor in human adjustment, the use of the test method becomes especially important. For example, the question may be raised: Is the

treatment of a mentally ill person by means of an electric shock followed by a memory loss in the patient? To answer this by means of case-study methods, psychoanalytic procedures, or by questionnaires would certainly be inadequate, whereas the administration of suitable tests before, and at intervals after, treatment will give much more reliable information.

Tests are also of great value as screens to sort out from large numbers of persons those who would profit from further study, or those who are unfit for certain types of occupation. As an illustration, tests have been used to eliminate candidates who might be unsuited for certain kinds of military service.

The ideal would seem to be to have available enough tests so that the entire personality of a patient might be so objectively and impartially described that the difficulties of the case-history or the psychoanalytic methods would be entirely overcome. Since such a goal seems to be quite remote, it is well to remember that, at present, tests can give but spotty information. Just as the laboratory technician, who finds evidences of an infection from a white cell count in the blood, can tell nothing as to the source or the location of that infection; so the psychologist, who gives an intelligence or a personality test, can tell nothing about the origin of the condition his tests reveal. Whereas the technician may be engaged in enthusiastically improving his measuring instruments, the sick individual needs the calm perspective of a diagnostician before he can be treated properly.

23. Experimentation. Until rather recent times the vagaries of human behavior frightened observers instead of inciting them to scientific investigation. (Allen, 2) Since the belief in demons, of both the beneficent and malevolent varieties, was so widely accepted in ancient times, it is not surprising that peculiar conduct should have been interpreted as the work of evil spirits in the individual. At a time when physical phenomena, such as lightning, earthquakes, fires, floods, and winds were explained as the activities of spirits, it would have been remarkable indeed if the more intricate and frightful activities of disordered persons could have been viewed with scientific coolness. Instead of calling a peculiar person a witch

who has made a compact with the devil, and attempting to cure him by incantations or to burn him at the stake as a social menace, we are today looking upon such persons as sick individuals who need understanding and treatment.

The last half century has seen a tremendous collection of clinical information about the mentally ill. This has sometimes been presented in the form of lengthy case histories (Hamilton, 20), as a collection of symptoms (Bluemel, 7), or as autobiographies of those who have been ill. (Beers, 5) Some students have arranged logical outlines into which to fit all these accumulating data (Bridges, 8), whereas others have tried to assemble them according to various theoretical interpretations. (Bentley and Cowdry, 6) We are now entering an era of increasing emphasis upon the need for strict experimental investigation of the wealth of theory that has grown up with this mass of clinical information. (Cameron, 10)

Two professional groups are most intimately concerned with this scientific advance. One group comprises those physicians who specialize in mental diseases and who are called psychiatrists. The other includes those psychologists who devote their attention to a scientific approach to the subject of mental disorder. The psychiatrist is interested primarily in healing; the psychologist is interested particularly in scientific research. The two interlock and help each other immeasurably. The clinical material of the psychiatrist provides hypotheses, the examination and testing of which the psychologist can carry out by means of his various laboratory techniques. The scientific findings of the psychologist enable the psychiatrist to improve his therapeutic procedures. (Abbot, *et al*, 1)

However, research in abnormal psychology is not restricted to work with unusual persons. The most significant contributions have, in fact, been coming from related areas, and it may pay to take a brief survey of the most important of these.

1. *Child Psychology*. Stress upon the importance of learning in the development of mental disorder has naturally directed attention to a study of child psychology. The earlier conception that childhood is a period during which certain trends, present at birth, unfold in a predetermined process

of maturation is giving way to the point of view that education plays a dominant part in the development of personality characteristics and that mental balance or imbalance may often be traced to early training. In order to advance such studies, various behavior clinics have been established where children who show beginnings of unfortunate traits are treated and comparisons are made with children who show no such deviations. Preschool laboratories are now functioning in great numbers in which the child is observed as he reacts to controlled situations of various sorts. This work is furnishing a great amount of material, some of it still highly speculative, but a substantial body of experimental research is growing from this interest in the growing child. (Doll, 14)

2. *Animal experimentation.* In recent years psychologists have used animals more and more extensively to test out various theories of normal and abnormal behavior. Studies in motivation, frustration, conflict, overstimulation, hormone balance, drives, and the like, lend themselves to animal experimentation more readily than to human because of the danger of permanent damage to those who are subjected to the various procedures necessary to test the many hypotheses that must be studied in extreme situations. When such studies were begun, various persons argued against them on the grounds that the findings would serve no good purpose in the interpretation of human conduct. Actual results have shown that these misgivings were in error. (Masserman, 38) From analyses of case histories and the observation of child development many hypotheses have been advanced that could not be tested on human subjects. Animals can be taught to be "neurotic" and, while the disruption of animal behavior after experimental treatment may not be exactly similar to that of human "neurotics" a number of basic principles have been clarified by such research. This area of investigation has promise of being even more fruitful in the future.

3. *Studies in therapy.* The final testing of any hypothesis as to the nature of a mental disorder, no matter where it originated and even though it may have been made to seem more plausible through child study or animal study, comes in the field of therapy. (Hinsie, 22) However, not all therapy is scientific, much therapy is haphazard, and many

reports from this field show a lack of scientific control and a failure to avoid certain logical pitfalls. (Hunt, 27; Landis, 33)

The zeal for cures tends to make the therapist impatient with the experimental requirement for controls. The argument is often advanced, that, if there are a certain percentage of cures with a given technique, there must be some potency in that method. This argument seems particularly valid if the percentage is a high one. One must expect some failures, we are told, and if a method gives, say, 75 per cent of cures, what more could one ask? What such reasoning fails to recognize is that it is the failures and not the successful cures that are illuminating. Any silly nostrum has to its credit some cures, and some thoroughly exploded remedies can boast a high proportion of successes.

As an illustration of the faulty logic often found in this area, we can use a reference to a medical superstition. At one time it was thought that treating the blade of the knife that caused a wound would make the wound heal. If this remedy is tried and a careful record is kept, it is quite possible that more than 50 per cent of the wounds will heal. Suppose that 90 per cent of such wounds healed, would that be evidence that the correct remedy was being used? No, we must also know what happens when the ointment is not applied to the knife blade. If we divide our victims of knife injury into two equal groups and treat one group (the experimental group) by knife annointings and administer to the other group (the control group) no such treatment, a comparison of the number, or proportion, of cures in the two groups will give us a valid answer. If the same proportion of patients recovered in both groups, obviously we cannot attribute any efficacy to the treatment, even if 100 per cent of the experimental group recovered. Only the failure to recover of those who are not treated can justify our belief in the cure.

A practitioner can, only with difficulty, be an experimentalist. This should be clearly understood, for even if the doctor has but the smallest amount of faith in his remedy, his conscience will force him to apply it; and he would feel guilty if his patient, after he failed to give the remedy, died, even if he might thereby gain scientific knowledge.

But if he remains aware of the peculiar position in which he is placed, the therapist may still contribute much to scientific progress. He will have failures in spite of his zeal. Instead of giving way to his feelings of defeat, these should provide the soil for new hypotheses. He will realize that some of his patients recovered because of agents other than his methods of treatment—these he can chalk up to good luck. Some will fail to recover in spite of his treatment—these will show that he is on the wrong track, and supply cues for new changes in direction. (Rosenzweig, 46)

VI. CLASSIFICATION OF MENTAL DISORDERS

No one basis for classification of mental disorders is entirely satisfactory; current classifications are, consequently, based on a mixture of different logical bases of differentiation. Furthermore, the names of various groupings are often misleading because they have been assigned at different stages in the development of the science, and frequently have not kept pace with advancing knowledge. The student, therefore, is faced with the problem of adapting new thinking to outworn appellations. (Hinsie, 23; Hutchings, 29)

24. Classification versus analysis of symptoms. In the early stages of its existence, psychiatry was occupied mainly with describing and classifying symptoms. This procedure has been strongly criticised by some students on the ground that it leads nowhere and encourages a false pretense of understanding where there is none. Giving a name to something that is not understood may dim rather than clarify thinking. Consequently, there has developed a wholesome tendency to stress psychological explanations with a corresponding lessening of emphasis upon the naming and classifying of symptoms.

To be sure, the pioneers in the field never advocated the principle that classification of symptoms was an end in itself. They undoubtedly recognized the importance of arriving at the meaning of symptoms, but hoped that, if carefully observed, accurately described, and logically classified, their meaning would become apparent. Failure in this procedure was due largely to the fact that these pioneers regarded all mental disorders as the medical man viewed a disease: they thought there must be one central cause and the logical

analysis of symptoms was designed to point out this crucial factor.

With the broadening of the concept of mental disorder, it has become apparent that the great diversity of forms, which individual differences in behavior may take, cannot be incorporated in a simple system. (Erickson, 16) The failure to delineate specific types of mental disorder, the inability to draw sharp lines between the various vague groups, and the fact that any one individual may straddle those arbitrary designations, may be confusing and even irritating to the student; but any comfort that might be derived from a sense of certainty in naming and classifying would soon be dispelled when it became clear that individuals, as found in actual life, do not fit into any such system.

25. Various bases for classification. Classification may conceivably proceed along one of three lines: individual differences may be organized according to the factors that cause or contribute to uniqueness; they may be classified in terms of the different types of behavior manifested; or they may be grouped together on the basis of therapeutic needs or legal disposition. (Sprague, 52) Psychiatrists favor the first type of classification because their primary aim is to cure and cure depends upon a knowledge of causal factors; psychologists tend to stress the second type because they have grown accustomed to studying what people do to find out why they act that way; hospitals and courts of law tend to utilize the third type of classification as a practical expedient. Usually hospitals place together those who can be trusted, those who need watching, those who are noisy, those who can work, and the like. Such a grouping, based on expediency, need not detain us.

26. Kinds of individuals considered in abnormal psychology. The practical impossibility of devising a consistent system of classification will become clear from a survey of the vast range of individual peculiarities that may be found.

In the first place, there are those who have some recognizable mental disease, called a psychosis. In milder form such conditions may be disguised under such terms as nervousness, run-down conditions, overwork, fatigue, and the like.

Then there are those individuals who have some sort of

internal disequilibrium. They may maintain a grasp of social situations, get along fairly well professionally, and may even seem relatively normal to their associates; but they recognize the need for help. Common symptoms of such inner conditions are morbid fears, scruples, irresistible impulses to do queer acts, persistent disturbing thoughts, doubts, and confusions.

Others are the victims of chronic invalidism or other complaints with no physical basis as far as any competent physician can discover.

Abroad in society are many individuals who may or may not be recognized as disturbing influences in the social order. They manifest defective self-direction, unbalanced performance, or unusual enthusiasms for causes that may or may not be worthy. By some they may be considered saints or geniuses, by others they are regarded as queer.

Then there are the malcontents who express their dissatisfaction with themselves and with life in general by inferiority complexes, jealousy, excessive suspiciousness, obnoxious aggressiveness, or by their fanatical devotion to some political or religious movement. If they happen to get into some worthy movement, they may make a valuable contribution to society; if they fall into some retrogressive movement, they may do inestimable harm. The result of their performance is of accidental value; history may laud one individual and condemn another who is driven by the same impulses and internal disruption.

Finally, there are those children who have disturbances of conduct that may or may not lead to later disorders. These include such symptoms as persistent enuresis, capriciousness with food, tantrums, night terrors, hostility to parents, overdependence, morbid shyness, speech disorders, nail biting, and the like. (Bentley, 6)

Terms to designate these various kinds of disturbances have gone through many changes in meanings. A typical illustration is the term insanity. This word came into popular use in England about the middle of the 17th century, and in medical and legal writings was used to replace such terms as madness, lunacy, and imbecility. Insanity was considered a definite medical entity until the 20th century. Late in the

19th century it became used less and less by physicians, and was replaced by such terms as psychosis, psychoneurosis, mental disorder, or neurosis.

With these changes in usage, the term insanity came into disrepute as a medical term. It is still used in a legal sense, a fact that reflects a continuation of the unfortunate custom of treating the mentally diseased person as a criminal. From a legal standpoint, it is important to know whether a man is sane or insane for several reasons. The law says that a man who is insane is not responsible for his actions; hence in criminal cases proof of insanity is used to accomplish the acquittal of those accused of illegal behavior. The sanity of a testator is a vital consideration in probating a will. Sanity is important in cases involving the designation of legal guardians. Finally, the courts have the responsibility of committing a deranged person to a hospital and, hence, must pass judgment on sanity. This last legal function has little to commend it. If an insane man is sick, it should not take legal action to see that he gets hospital care. However, it is the cultural and emotional attitudes that have been responsible for the custom of treating the insane as criminals; the legal procedures are merely a reflection of these attitudes. (Warson, 58)

27. Abridged official classification of mental disorders. Practically every classification in good standing involves a mixture of causal analysis and the description of syndromes (the technical name for symptom combinations). Because our emphasis will be upon analytical interpretation, this text will not adhere to any formal presentation of the various classes of psychoses in the order given in any such system. Some may want a brief outline of the entire field, which will lend perspective to the study of abnormal psychology and provide a background into which the detailed analyses of the different forms of unusual behavior will fit. Such an outline will be found in Appendix I, which gives an abridged version of the official classification of mental disorders adopted by the American Psychiatric Association.

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CHAPTER II

THE PROCESSES OF ADJUSTMENT

A man of forty walked out of his physician's office after a thorough physical examination, elated over the report that he was in excellent health and pleased with the prospect of living to a ripe old age. He began to recall the various difficulties he had overcome through his life. He remembered the account his mother had given him of his narrow escape from death by scarlet fever when he was a tiny boy. He thought about the awful time he had getting his teeth straightened. He enumerated to himself the many friends he now had as compared with the few he knew as a grade-school student, at which time he was jealous and hateful of all his comrades. His mother had done an excellent job getting him over this hurdle, he mused. Then he reverted in his thoughts to his physical health. He thrust out his chest, raised his head in the air, took a deep breath and, absorbed in his own self-satisfaction, stepped off the curb in front of an oncoming car. Gloating over his success in adjusting to the complex aspects of living, he neglected an elementary precaution of adjustment to physical conditions and failed to do what any child would have done—he failed to look before crossing the street.

Each person has a vulnerable spot, an Achilles' heel, which may some day be the cause of his downfall and none of us knows in advance what that will be. In spite of such a pessimistic viewpoint, which we must all admit is true, the average man is an eternal optimist who learns to detect signs of danger, to surround himself with safeguards, and thus to ward off threats to his continued comfortable existence. This is as it should be. That man lives the richest life who does not spend too much time contemplating his ultimate fate but, instead, learns to relish a little dangerous living while safeguarding himself by the intelligent avoidance of undue risk.

VII. LEVELS OF ADJUSTMENT

For allies in his contest for existence man has a wonderful system of adjusting mechanisms. These are so complex that it is most difficult to classify them. For the sake of clearness, we may well divide them on the basis of levels of complexity. While such gradations cannot be found to exist in concrete form, they do provide a conceptual framework upon which to build our ideas of adjustment mechanisms. (Rosenzweig 67, p. 379)

28. Physical adjustments. The simplest and most fundamental adjustments are to the elementary laws of physical bodies. The human body is a system of rigid levers, articulating in various ways and moved by muscles. Each person has to adjust to contacts with other physical objects. If both a locomotive and a human body try to occupy the same space at the same time, the body is likely to fare worse than the locomotive. Movement may be definitely blocked by such an obstruction as a stone wall. The human body cannot offer successful competition to an exploding bomb. Those who cannot adjust on this simple level are likely to be eliminated. Man is no match on the physical plane for a bolt of lightning. His only salvation from physical threats is to invent some indirect means (using his brains to do so) for safeguarding himself.

29. Biochemical adjustments. Next in order come the biochemical adjustments of the human body. These are the assimilation of food, the elimination of wastes and poisons, the building up of immunity to the invasion of hostile bacteria, the reactions to hormones, and the like. While the amount of adaptability on this level is a little more flexible than that at the physical level, there are definite limits beyond which the organism cannot go. For example, a dose of strychnine may prove fatal to an individual who has not become habituated to the drug; whereas tolerance for such a drug could be accomplished by developing a strychnine habit, beginning with tiny doses and increasing gradually the amount taken.

30. Emotional adjustments. When a man's sense organs inform him that he is in the presence of conditions so new, so violent, and so threatening to his existence that ordinary activities are inadequate, a whole system of adjustments is initiated. These go by the name of emotional reactions. They

involve the radical changing of some bodily processes, the initiation of others that are ordinarily dormant or that function at a low level, and a cessation of others that can temporarily be dispensed with. The general result of all these changes is that the individual is more able to meet the emergency. The wholesome man uses his emotional mechanisms when they are needed; the ineffective man fails to utilize them at the right moment, habitually keeps them from functioning so that they cannot be used when needed, or works them so incessantly and violently that they fail him when a real emergency arises.

31. The cerebral cortex level of adjustment. Man's most important possession is his cerebral cortex. By it, adjustments can be made on the highest of all levels. Nature has provided safeguards against direct injury to this organ by floating it inside the bony skull. Some poisons and disease organisms can find access to it, but man has devised many ways of safeguarding it from such damage. The greatest function of man is to learn how to use his brain wisely and not to invent ways for wrecking it. There is ample room for progress in this direction and, although some writers are pessimistic on this score, the sane use of man's cerebral cortex is the only hope for human survival and happiness. The real purpose of abnormal psychology, in fact, is to study the mistakes that have been made and to discover methods for putting the human cerebral cortex to the best use.

32. The socio-moral level of adjustment. On a still higher level each individual faces the necessity of making some sort of adjustment to other persons. Can he get along with the other members of his family, with his school or business associates, and with those whom he meets casually? Is he loved and respected by others or do they shun him? Is he contributing to the advance of society or is his influence a pernicious one? Is he a criminal, a liar, or a recluse? Is he happy when with others or is social contact painful to him and to others? When he achieves something worth while, do others gladly give him credit or do they discredit his work because of his obnoxious personality? Such questions indicate the importance of social and moral adjustments. The answers for any one man are to be found in the attitudes he has built

up as a result of his experiences, the moral codes against which he lines up his treatment of others, and the satisfactions or suffering his associations engender.

Strangely enough, it is in this area that man has made the least progress through the ages. It is the inability to organize a wholesome family life which sets the stage for personal unhappiness and mental imbalance, and it is the inability to live in larger groups which provides the basis for attitudes that incite men to use their brains to destroy each other. About all man has done is to develop a host of verbal precepts for social living while practicing methods that make these rules seem absurd and foolish.

We may preach to children the doctrine that the best way to get along with others is to act in such a way as to please them—and this principle is true if one desires to gain permanent friendships—but by actual hard experience most children learn that they can get their own way better by annoying their elders. True, they do not consciously set out to make themselves obnoxious, but they learn the simple fact that when they are good they are ignored and when they develop a nuisance value they can force others to serve them. The various devices that children use for this purpose are as numerous as the touchy spots in their parents, nurses, and teachers. The clever child hunts out the sensitive area of each different person with whom he has to deal and turns on the proper annoyance, whereas the child who is not so versatile may develop a single one and attempt to use it on everyone. Some of the most commonly used methods are pouting, teasing, begging, crying, demanding sympathy, getting in the way, refusing to eat, negativism, deliberate disobedience, bed-wetting, thumb-sucking, running away, complaining of injuries, getting nauseated, temper tantrums, deliberate dirtiness, banging furniture, getting into dangerous situations, and on and on. Observation of children makes it clear that they do not deliberately set out to acquire annoying behavior. They may be active merely because they enjoy activity, but often in this way they find out what the adult does not like. For example, one mother complained that her little boy from the very start did everything he could to annoy her. Asked

to specify, she said that he would kick when she tried to pin on his diaper and then look up at her and laugh when he found this annoyed her. Obviously the boy had no malicious intent; he was having a good time and the mother simply mistook his fun for intentional annoyance. Such a mother teaches her child to do the trick she dislikes although she does not mean to, and, after he has learned, she is not aware that she has taught him.

A child brought up on such a diet is very likely to continue the fundamental principle although he may vary his methods somewhat. He may act on the principle that other persons are bothersome objects that must be circumvented in some manner. Ways of accomplishing such an end are quite varied also. The youth may become an outright sneak, banking on his ability to outsmart the other fellow. He may browbeat the other person by open aggressions, by bullying, by getting into a position of some authority and abusing the powers given him, or he may nag and criticise the other person until he gives in rather than listen to the verbal abuse heaped on him. Or he may attract attention by more subtle means, such as developing some eccentric type of behavior, voicing some queer opinion, wearing unusual clothing, or the like. One student, in order to attract the attention of all his professors, bought a rubber stamp with letters an inch high and stamped his name on all his papers. Some insist upon getting mixed up in every prank that occurs, some develop a fake submissiveness, some pretend to be very devoted in order to put the other person under obligation to them.

Many of these activities do no particular harm, but they pave the way for deep-seated inabilities to make the best type of social adjustment. Too often they are merely adult manifestations of the unfortunate learning of childhood; they continue the theory that the best way to get along with others is to search out their sensitive areas and then irritate these spots until the other person capitulates. Solid friendships are not likely to grow in any such soil.

VIII. MAINTENANCE OF INTERNAL BALANCE

In biochemical areas man is helped in his battle against destruction by automatic processes that realign their forces when danger limits are approached. In other areas a man is master of his own fate. Since nature is so clever in the way she takes care of us, it may pay to survey some of her methods before going on to those areas where man must use his own judgment. Man can gain skill in living by becoming acquainted with the wisdom of his body. (Cannon, 12)

As early as 1860 the great French physiologist, Claude Bernard, stated that there are two environments—a general environment which surrounds the organism as a whole, and an internal environment in which the living elements are incorporated. He further pointed out that, while these living processes are in a state of constant flux, there is a fixity of internal change that makes possible a free and independent life. (McFarland, 54, p. 859)

33. **Homeostasis.** Later work has shown that man is equipped with delicate regulating mechanisms that enable him to maintain a constant bodily temperature, and that control the supply of salt, water, sugar, oxygen, and other vital substances in his body. Moreover, this constancy is not rigidly maintained, but is characterized by continued change while being kept within bounds by delicate readjustments. Homeostasis is the name given to this state of unstable equilibrium in the biochemical field. (Cannon, 11) A good synonym for this term is comfortable constancy (Poffenberger, 63), and when the concept is used in this broader sense, it might well be applied in the field of psychology. (Fletcher, 20)

Regardless of which term we use, we should get clearly before us certain pertinent considerations. In the first place, we must rid ourselves of any notion that a living organism strives to attain a position of maximum safety and then tries to remain at that point. Comfortable constancy does not mean any such condition of inertness. Instead, each arena of action can be considered as an area with a hypothetical center equidistant from all dangers and with an outer boundary line beyond which it is not safe to roam. A man may move around at his pleasure in any of these safe areas but is given various kinds of warnings when he gets too near the fringe of danger. Furthermore, these various arenas are numerous and affect each other in all sorts of intricate ways. The attempt to stay in relative safety in one sphere of action may take a person near the danger zone in another. This leads to conflicts and

some sort of compromise adjustment must be made. As long as man is alive there is no complete adjustment in the sense of coming to rest.

Another vital lesson that comes from this viewpoint of living as the maintenance of comfortable constancy is that the utmost safety comes from being sensitive to faint warnings of danger rather than from ignoring cues until a crisis is reached. Absorption in adjusting in one area while ignoring others may prove fatal. What good does it do a man to take care of his health if he does not have sense enough to avoid getting in front of a fast-moving car! That is to say, our concept of comfortable constancy requires an increase in balanced perspective as living increases in complexity.

The constant endeavor to maintain such a perspective is the student's best safeguard against easy generalizations in the field of human adjustments. When any person is tempted to explain all human ills by any one factor, or to cure all troubles with one panacea, he is surely wrong. Damage may be done to a person by malnutrition, by disease, by poor heredity, by bad mothering, by the development of improper habits of thinking and acting, by poor companionships, or by political and social wrongs; and ills are overcome by eugenics, by medical care, by better parental protection, by improvements in teaching, by social reforms, and by economic readjustments; but the selection of any one of these for emphasis is a form of distortion. To ride a hobby may be fun, but the end of such a jaunt is never the truth.

34. Some effects of internal imbalance. Many vital living functions are accurately controlled by mechanisms over which the owner has no conscious jurisdiction. When these are functioning normally, a man may be free to devote himself to pursuits that are not essential to keeping him alive but that may be fruitful in other ways. Let the adjustment mechanisms function improperly, and a man's entire manner of living may undergo radical changes.

1. *Compensatory appetites.* The way in which the needs and overt behavior of the organism interact in an attempt to maintain balance is illustrated by the case of a three-year-old boy who had an abnormal appetite for salt, an appetite that was first noticed when he was one year old. He ate

enormous amounts daily, literally by the handful, the way other children eat sugar. His mother reprimanded him and tried to teach him moderation but without results. He became ill and was sent to the hospital, where he was put on a diet containing the usual amount of salt. In seven days he died. Autopsy revealed that he had a tumorous growth in his adrenal glands, which had completely destroyed the outer layer, or cortex, of the gland. This part of the adrenal gland maintains the salt balance in an individual when it functions normally. In this boy that function was lost and he excreted the salt which he should normally have retained in his body and without which he could not live. His voracious appetite for salt had enabled him to live by making up for his inability to retain salt in the normal manner. (Wilkins and Richter, 87)

Lest the reader get the idea that this was a simple situation that could have been permanently remedied by permitting the boy to eat salt without restriction, it should be pointed out that this condition entailed other imbalances. The immediate cause of his referral to the hospital was a pathologically precocious sex development, a condition brought about by the tumor. He had stayed alive for two years by eating excessive amounts of salt, but had he been permitted to continue to satisfy his salt craving, a complete readjustment would probably not have been effected thereby. (Shock, 82, p. 602) Nevertheless, the significant point is that when an internal adjustment mechanism breaks down an individual may be incited to overt acts that at least help bring about a partial readjustment.

This interpretation has been supported by extensive experimental evidence. If the adrenal glands of rats are removed, the rats will live only ten to twenty days because of the excessive loss of salt in their urine. When salt is administered at the same rate that it leaves the body in the urine, these rats may be kept alive. When rats which had been deprived of their adrenal glands were given free access to salt, kept in a container separate from their food, they would eat enough to maintain themselves and to remain free from symptoms of salt insufficiency. (Richter, 65, p. 885)

A similar adjustment takes place when the water balancing

mechanism is disturbed. Removal of the posterior lobe of the pituitary gland takes away an animal's most important internal means of regulating water metabolism, and large amounts are lost through excessive urination. Rats deprived of this gland, if given free access to a water supply, will drink enough to maintain themselves indefinitely. (Richter, 65, p. 879)

2. *Adaptive behavior.* Different theories have been advanced to explain the manner in which these internal imbalances produce a change in appetite. One is that there is a chemical change in the animal that makes him more sensitive to the needed elements. Some experimental evidence seems to favor this theory. (Richter, 65, p. 889) Another theory is that the animal experiences more comfort when he eats the needed substances and thereby becomes conditioned to favor them. That is, he learns by experience to eat the food that is best for him. Probably both increased sensitivity and added comfort contribute to the result. The significant factor is that the animal organism is so adaptable that when one adjustment mechanism breaks down, others tend to step in and make up for the disturbance. (Shock, 82, p. 585)

Still more striking is the activity of a rat after the internal mechanisms for regulating temperature have been disturbed. Temperature balance is influenced markedly by secretions from the pituitary and the thyroid glands. After the removal of one or both of these glands, body temperature tends to fall, and if exposed either to cold or to heat, the animal will die. When given free access to nest-building materials, rats attempt to make up for the failure of their internal temperature mechanism by excessive building of nests to keep warm. Such rats use ten times as much material as they used before the glands were removed. (Richter, 65, p. 880) This increase in nest-building activity, as a result of a disturbance of the heat-regulating mechanism, has been produced experimentally in both male and female rats.

A similar explanation has been advanced for mothering behavior in animals. The introduction of prolactin into a castrated male animal will incite mothering behavior in him. The discomfort produced by lactation will induce an animal to mother the young of different species. In short, many of

those activities that were formerly explained glibly by reference to some mythical instinct are now attributed by workers in the field of animal behavior to the attempt on the part of the animal to regain a balance that has been disturbed by changes in the internal regulatory mechanisms. (Riddle, Bates, and Lahr, 66)

3. *Diminution of overt activity.* Some internal imbalances lead to a diminution rather than an accentuation of overt behavior. Such an adjustment is illustrated by oxygen deprivation. The organism has no adequate means for storing a supply of oxygen, so that without oxygen an individual will collapse within a few minutes. Certain protective devices are operative, however, in the early stages of oxygen lack, which may safeguard the organism from death.

If anoxia is produced slowly as in climbing, or ascending a mountain by train, the initial effect is one of stimulation, possibly due to overcompensation to the oxygen lack. The reactions to this stimulation may be talkativeness, quarrelsomeness, and irritability. Then follow lassitude, headache, failure of appetite, or even nausea. If a person stays in high altitudes for long periods, he may get adapted to the changed circumstances and become fairly comfortable.

If the anoxia is produced suddenly, as in an airplane ascent, the individual may experience, at first, a feeling of well-being. This is quickly followed by sensory dullness and mental lethargy. A person often has a queer feeling that his mind is clear, although, actually he may demonstrate unsound judgment. Finally, he may have an overpowering desire to sleep or he may suddenly faint. (McFarland, 54)

The bodily tissues most quickly affected by anoxia, it has been found, are those in the cerebral cortex. Such tissues do not recover if deprived of oxygen for more than five to eight minutes. (Cannon, 11) Furthermore, those tissues that are involved in the control of intricate behavior, it would seem, are the first to become incapacitated when there is a demand for simplified behavior in order that the organism may avoid destruction. Thus, at the first signs of internal imbalance, various compensatory activities are instigated to realign the forces within and to utilize overt behavior in such a manner as to make up for the disturbance. When the crisis becomes

acute, and the continuation of violent activity would involve the expenditure of resources that are rapidly becoming depleted, the organism takes the pathway of retreat, giving up latest acquirements first, while retaining the most basic and essential physiological activities.

Cannon's use of the expression "wisdom of the body" to describe these internal adjustments is certainly most appropriate. Fortunate is the man who can guide his adjustments in the complex areas of social living, vocational enterprise, and intellectual achievements with equal skill. As we approach the study of these more complex adjustments, we shall do well to carry over from this brief survey of internal adjustments the simple principle that the aim of life should not be to attain repose but to thrive in the midst of all sorts of influences that make rigidity impossible. The aim of living is to be happily maladjusted rather than to seek the ultimate of repose—death.

IX. EXPERIMENTAL STUDIES OF ADJUSTMENT

The use of experimental procedures with human beings for the purpose of studying mental abnormalities is limited for the simple reason that permanent damage might be done to the subjects of such experimentation. Consequently, experimenters have eagerly exploited the possibilities for using animals to test the various theories of adjustment that have been suggested by clinical studies.

Such experiments have made it perfectly clear that certain circumstances may be set up under which an animal's whole pattern of living may be radically changed and that these modifications may be long-lived or even permanent. These alterations may be so great as to suggest that the animal has been made neurotic. To designate such gross changes the term experimental neurosis has been coined by animal experimenters, and this term has been defined as a chronic disturbance in behavior as a result of environmental stress produced experimentally. (Cook, 13) The animals that have been most extensively used in such experiments include dogs, cats, pigs, white rats, sheep, and chimpanzees.

35. General pattern of experiments. Although many different methods have been used to produce abnormal behavior in animals and although manifestations of disruption vary greatly, a general pattern may be discerned in all these studies. The animal is first (a) trained to act in a regular manner; he is then (b) subjected to unusual and insistent stimulations that do not conform to the general pattern to which he has become accustomed; and (c) the resultant un-

usual activities are reported as evidence that the animal's personal integrity has been disturbed. (Masserman, 53)

This pattern obviously corresponds with the usual conception of an imbalanced life in a human. Each child is subjected to social training; he comes to expect certain situations to recur and he knows how to respond to these. When some crisis occurs, he must change his pattern of activity. If, to the outside observer, such a change seems in keeping with the demands of the moment, he is still regarded as normal and sane. Should the observer fail to see any relationship between the needs of the moment and what the individual is doing he is likely to judge the disturbed person to be "neurotic" or worse. The latter judgment is likely to be strengthened if these queer reactions persist long after the situation that produced them has subsided.

As we shall point out in later sections of this book, many human conflicts cannot be confined to any such simple pattern. Hence, this pattern of animal conflict should be regarded as but a skeleton or framework upon which to build our conceptions of human adjustments.

36. Specific techniques for producing animal neuroses.

Experimenters have been quite ingenious in their invention of ways and means of tormenting animals for the purpose of producing abnormal behavior. The first of these came by accident when experimenters became too ambitious in their demands upon experimental animals and pushed them beyond their capacity. Intrigued by the unexpected results of such accidental pressure upon the animals, deliberate annoyances and frustrations have been applied. Some of the forms may be outlined as follows:

1. *Attempting to force an animal to make discriminations that are beyond his capacity.* For example, a dog was trained by Pavlov to respond to a luminous circle projected on a screen by the procedure of feeding him each time the circle appeared. The dog was taught to refrain from responding to an ellipse of the same luminosity and surface area by not feeding him when the ellipse was projected on the same screen. Thus, the dog was taught to discriminate between the circle and the ellipse. After the dog had been thoroughly trained, the ellipse was progressively changed so that it be-

came more and more difficult for the animal to discriminate between it and the circle. After three weeks' work during which the dog was given the problem of discriminating between a circle and an ellipse with a semi-axis ratio of 9:8, the animal's discrimination deteriorated, but, in addition, his general behavior underwent an abrupt change. The once well-behaved dog began to squeal in its stand, wriggled about, tore off the apparatus with its teeth, bit at the tubes connecting the apparatus with the recording instruments, and barked violently when taken to the experimental room. Such behavior was in such striking contrast with the animal's usual good behavior that Pavlov was sure that the animal had become "neurotic." (Pavlov, 61)

2. *An increase in strain placed upon the animal.* This may be accomplished by a sudden increase in the number of daily tasks given an animal or some similar increase in the rigidity of the training schedule. The effects of such an increase in the demands upon a well-trained animal are similar to those resulting when the animal was forced to make finer and finer discriminations. (Liddell, 40, p. 391) The monotonous repetition of an experimental sequence will also seem to tax the animal beyond his endurance and to produce behavior disruption. (Liddell, 40, p. 392)

3. *The interruption of a satisfying response by the injection of an unpleasant but harmless stimulus.* This procedure is well illustrated by experiments on cats. After a cat had been trained to secure food by pressing a switch that actuated a light-and-bell signal, he was subjected to an air blast at the moment of food taking. An animal thus treated came to ignore food in the open box even after 48 hours of starvation; he snarled at the sight of the food, persistently pressed the switch that actuated the feeding signal but refused to walk over and take the food, and made frantic attempts to escape from the apparatus. (Masserman, 53)

4. *Changing the rules.* After an animal has learned to procure food by selecting a certain door, the rules may be changed so that when he makes a leap for the correct door (according to the training he has received) he finds the door locked and gets only a bump on his nose. The situation may be made more irritating by forcing the animal to choose by

playing an air blast on him. All sorts of shocks and unexpected circumstances have been invented so that the animal can be subjected to different degrees of pressure to perform an act that can end only in failure for him. (Dimmick, Ludlow, and Whiteman, 17)

5. *Excessive sensory stimulation.* This method has been used particularly with rats. Being subjected to intense auditory stimulation the rat may dash violently about the room, fall into a convulsive state with tonic and clonic spasms, followed by a passive state during which resistance to handling virtually disappears and during which the animal can be molded into practically any position. These reactions have been given the name audiogenic seizures; they differ significantly from the "experimental neuroses" exhibited by other animals as the result of a conflict situation. They seem much more related to epileptic convulsions than to the symptoms of neuroses that occur in conflict situations; they are more short-lived than the conflict neuroses; and they seem to be the result more of physiological strain and exhaustion than the end of an unresolvable psychological problem. (Kinger, 19)

6. *Disruption of rapport with the experimenter.* In most animal experiments nothing is said about the relationship between the animal and the experimenter and, in the attempt to keep the conditions objectively uniform, this factor has been ignored. Yet this relationship may very possibly have played an important part even where it was not mentioned. In such experiments there is usually a training period in which a harmonious relationship is built between the animal and the experimenter. The animal comes to trust the experimenter and in various ways exhibits his liking for and his confidence in him. Then, for some reason that must appear strange to the animal, the experimenter betrays him. As a result the animal becomes irascible, he fights the experimenter, runs from him, and exhibits many of the signs which, if observed in a little child, would be explained as symptoms of "rejection." (Liddell, 40)

37. **Multiple causation of animal neuroses.** This survey of the variety of methods that have been used for precipitating abnormal behavior in animals makes it clear that there is no

one best way to make animals perform in a "neurotic" manner. Possibly sheer stress is more effective with lower-order animals than with those of a higher order, and the conduct induced by such stress is more short-lived. Conversely, higher-order animals are more affected by conflict situations, and the abnormalities thus precipitated are likely to be of longer duration. While this principle has not been too well verified it lends credence to the view, which clinicians have developed in their studies of human maladjustments, that a straightforward frustration by some rather simple type of obstacle is not so serious as a conflict between complex aspects of personality.

38. Symptoms of neurotic behavior in animals. What does the animal do that makes the experimenter label him as neurotic? The descriptions of such conduct vary from experiment to experiment and are affected by the specific situation in which the animal finds himself; but the various studies show clearly that the judgment passed upon the animal is not strictly the result of what the animal does but the interpretation of the whole setting in which his actions occur.

Some of the actions observed are as follows:

1. *Hyperexcitability.* This is manifested by restlessness, vocalizations, micturition, vigorous and wild reactions of offense and defense, persistent disturbances of breathing, and heart action.

2. *Hyperirritability.* An animal will give a violent startle to a sudden but very mild touch stimulation, to a mild flash of light, or to a faint noise. When the normal animal is eating such stimuli are usually ignored. The hyperirritable animal, on the other hand, will jump, move back from the food, and even run to a remote corner of the building. This particular symptom is usually looked for as one of the first indications of neurosis and seems to be one of the most persistent.

3. *Overreaction to any stimulus.* In conditioning experiments the animal will not only raise his paw on the given signal but will jerk it up to an unnecessary height. It is as though a persistent anxiety made him do anything to excess. This anxiety leads to restlessness during the intervals between stimuli in the experimental situation.

4. *Bodily rigidity.* Rigidity of the limbs even to the extent of a convulsive performance.

5. *Deep inhibition.* This is described by some experimenters as a passive stubbornness. The animal will become docile, will permit his limbs to be moved in any way and will maintain any position into which he is placed. He becomes plastic but will do nothing on his own power.

6. *General living changed.* Animals, after being subjected to situations of stress in the laboratory, carry their abnormal behavior home with them. They not only act in these unusual ways during the experiments but become socially maladjusted when placed with their mates. (Anderson and Parmenter, 4)

Contrasting the above reactions with what the animal usually does, such behavior is certainly abnormal; but on what grounds should it be called "neurotic"? Were a wild animal brought into the laboratory would he not act in just this manner and would not that be considered normal for a wild animal? The difference is that the laboratory animal has been made as docile as a well-disciplined school child and then, due to the unusual circumstances set before him, has reverted to some form or forms of wild behavior. (Brown, 10)

The term neurotic behavior, then, does not designate certain kinds of activities in and of themselves but the fact that these activities occur in an animal which has been trained to act differently. Nor can the persistence of such behavior be used to argue for "neuroticism." Certain wild animals refuse to become domesticated and will die rather than submit to the confinements of civilization. Therefore, we may conclude it is not the stress, nor the conflict, nor the confusion alone that disrupts the animal's life but these in conjunction with the curtailment of liberties and other regimenting training that preceded the crisis. (Liddell, 40)

39. **Analysis of experimental neuroses.** We shall be able to envision the significance of the preceding general statement by examining some specific aspects of the whole situation. Such an analysis will make clear also the importance of these same aspects in human conflicts and the resulting abnormalities of conduct.

1. *Complete subjugation to a set of well-formulated rules is the essential background for an experimental neurosis.* Through long periods of training and many, many trials the animal learns that certain responses on his part lead to rewards whereas others lead to punishment. Having learned his lesson well, he sits as a well-trained school child might do, and waits for the prescribed signal so that he can do the right thing and profit thereby. Should this customary response fail to bring about the expected result, the animal may manifest confusion, pause, and then try some new method. If he finds it impossible to wait because some new force is introduced (such as a blast of air, a push, or a shock) he is thrown into utter confusion. Note, however, that the confusion of a wild animal which never knew any rules is a vastly different thing from the confusion of an animal which knew the rules perfectly and which suddenly discovers that all that he has learned is of no value to him. The training has deprived the laboratory animal of many random responses that are still available to the wild animal.

2. *Intense stimulation is more effective in producing disrupted behavior than is mild stimulation.* This rule holds all along the line, whether the situation be one of conflict or one of simple sensory stimulation. In a conflict situation, for example, queer behavior is more likely to result if pressure is put upon the animal to act than if he is permitted to delay action. Having found that the choice of the door through which he has learned to obtain food is no longer correct, the animal may refrain from choosing at all. However, if he is prodded by a blast of air or an electric shock to make a decision that is likely to result in an unpleasant bump on the nose instead of food, disruption is likely to result. Violent sensory stimulation may in and of itself cause discomfort, but violent sensory stimulation that incites to behavior that will add still more discomfort adds insult to injury.

3. *Behavior that is called neurotic by the experimenter may be the animal's attempt to adjust.* The experimenter has trained the animal to act in a specific and schooled manner, he changes the rules, and the animal acts in some unusual manner. The animal screams, bites, throws himself about and does other acts that seem to the experimenter to have no bear-

ing on the situation. But is such an interpretation valid? These actions do serve a purpose; the animal gets out of his difficulty. He learns that if he "misbehaves" violently enough and long enough, the experimenter will give up. Hence, "neurotic" behavior on the part of the experimental animal is the animal's way of adjusting to an insane situation set up by an experimenter who, from the animal's point of view, has run amuck. Let the reader attempt to imagine himself in the animal's situation. Having done the act he has been taught to do, he experiences an unpleasant jolt. Would he take his punishment and then calmly wait for the repetition and take his punishment again and again? Of course not. In short, the animal learns neurotic behavior in the same way that he learns docile behavior, namely, he finds it effective. In just this manner a human being learns to develop "defense mechanisms" or neurotic symptoms; he finds that his mother, father, or society responds to such behavior on his part, whereas routine and socially acceptable behavior fails.

4. *Activity of any sort tends to reduce the amount of general tension in the animal.* With the realization that the customary rules for reaction bring only pain, there is a tendency to delay overt activity and to build up visceral tensions, and to manifest signs of what has come to be called anxiety. If the animal is permitted to make any sort of skeletal response, whether it is of the sort to remove the irritation or not, anxiety symptoms will subside. For example, in one experiment chimpanzees were trained to pull in food cups on an endless belt. Two frustrating situations were presented. In one the animals were permitted to pull in the cups but found the cups empty. In the second situation the belt was made immovable. There were more signs of anxiety or frustration when the belt was immovable than when the belt could be moved but the cups were empty. (Haslerud, 27)

5. *A conflict involving alternatives of relatively equal strength produces more tension than a situation in which the animal makes first one response and then another.* As a matter of fact, poise between two equally potent alternatives soon gives way to a complete response first to one and then to the other factor. At times the period of poise between the two alternatives may be prolonged, in which case the animal seems

to be pulled in two directions simultaneously. He seems dissociated, pulled between two opposite and incompatible forces. (Curtis, 16) In other instances, there are incipient movements first in one direction and then the other, or between several alternatives. This situation has been called persistent non-adjustive behavior. It is characterized by tremors, jerky movements, incipient acts, and irrelevant movements. In the latter category come such things as putting paws in the mouth, nail biting, head jerking, grimacing, whining, barking, crying, and the like. (Sampson and Schneirla, 71)

6. *A conflict may produce an increase in aggressive behavior.* The resultant of these emotional tensions, incipient movements, and non-adjustive responses may be to give way to aggressive activities. (Sears, 75) These may be effective in changing the situation enough to bring about some relief from the irritating situation. For example, the animal may bite the experimenter and thus, at least, get some temporary relief from his annoyances. Whether the aggression actually accomplishes any beneficial change in the environment, it at least relieves the animal's emotional tension. (Sears, 73)

7. *There may be a reversion to some simpler type of response.* In view of the fact that the animal now finds that his recent methods of resolving a situation no longer are effective, what more natural than that he should try some method which, at some previous time, had been effective? (Kern, 35)

8. *The persistence of signs of breakdown is in proportion to the breadth of the damage done to the learned patterns of behavior.* If the only conflict develops around some specific way of getting food or doing some circumscribed task, the animal is likely to persist in his "neurotic" behavior only so long as that problem is in the foreground. If, on the other hand, the whole relationship between the experimenter and the animal is upset, the behavior is likely to cover more aspects of the animal's living and to persist longer. The animal's whole pattern of living seems to change. He not only objects to coming to the experimental chamber, he changes his attitude toward the examiner, toward other persons, and toward his animal companions. This distinction in the degree of disruption in animals is analogous to a similar differentia-

tion in human frustration. For example, a person may be upset by losing money. Such disruption would be analagous to the situation in the laboratory where the animal no longer was able to get his food by pulling a certain lever or choosing a certain door. Something has gone awry that calls for some new type of adjustment to that particular situation. On the other hand, much more damage is done to the personality if a man has lost his money through the perfidy of good friends, through some immoral act on his own part, or if his loved ones deserted him as a consequence. In any such event, his self-esteem dwindles and his grip on life weakens. This is analogous to the situation where the animal's best friend, the experimenter, has double-crossed him. His trust and consequent confidence is gone; in its place comes hate and uncertainty. (Maslow, 51; Rosenzweig, 68)

X. FRUSTRATION IN HUMAN ADJUSTMENT

Frustration has been defined as the experience that ensues when an organism meets a more or less insurmountable obstacle or obstruction in its route to the satisfaction of some vital need. The dynamic energy (need) created by this thwarting has been thought to be accompanied by a corresponding distress signal on the part of the individual thwarted; such a distress signal has been given the name of press. (Murray, 60) Such a press is supposed to incite the individual to do something about the obstacle, and, since the usual purpose of such activity seems to be to relieve the situation, the generalization has been made that aggression is the natural response to frustration. This simple conclusion has been qualified by research workers in this field, and it is now conceded that a great many responses may be made to frustration. While aggression may frequently occur, this fact should not blind us to the vast range of other reactions to thwarting. (Sears, 75)

40. **Sources of frustration.** The desirability of freedom is seldom so highly prized as when it has been lost. The value of an article increases with the realization that it is unattainable. A barrier does not constitute a frustration until it seems to block the way toward some goal. The value of freedom, or of some coveted article, and the irritating function of a barrier lie not in the objects or conditions so much as in the attitude of the person who is deprived of what he thinks he wants. Conceivably, then, frustrations could be eliminated in two entirely different ways. One method would be to teach individuals to need and to want little or nothing, and the

other method would be to make sure that every whim is satisfied immediately. No one with a grain of realism would expect to make either plan function successfully. The real problem is for each person to learn how to deal with each frustration as it arises.

If the frustration is a straightforward interference that is easily recognized for what it is, the natural response would be active opposition to its influence. However, most psychological frustrations do not fit into such a simple pattern, and ability to resist opposition is complicated by a great many factors. For this reason the student should not be misled by the simplicity of these terms into the belief that the actual situations are equally straightforward. An illustration may indicate some of the complicating factors. Suppose a man does not have the money to buy food for his family. With no more facts at hand, the situation may appear to be one of simple deprivation—poverty acts as a frustrating agent against which the man may fight or from which he may passively retreat and starve. However, additions to this simple situation may come in the form of beratings by his wife and children. They may threaten him with physical violence if he does not get out and earn some money. The active instigation of his family presumably will have more influence in inciting the man to work than if the only frustration were his own passive hunger. Besides these external irritations of poverty and maltreatment by his family, internal complications can easily contribute to his unhappiness. He may remember how he lost his money in silly business ventures, in poker games, and in various escapades about which he is not very proud. The guilty pangs resulting from such memories can make him feel that perhaps his wife and children are justified in their treatment of him. But even this may be too simple. He recalls how he lost the good job he had when he married because he was caught stealing some money to buy his wife a fur coat. He recalls that he wanted to buy the coat because she had remarked how much better a former rival of his treated the woman he had married. He was jealous of this fellow and that was the real reason he had stolen. Why should he now work to provide for a woman who wished she had married another fellow? Thus, to the simple frustration of a lack of money is added

the internal conflictual situation of hate for his wife for her supposed interest in another man, a desire to get revenge on her by refusing to work, a feeling of guilt, and a deep sense of shame.

41. Internal conflict versus external frustration. Even though the above illustration is much too simple to fit many human situations, it should make clear the essential difference between the frustrations produced in most animal experiments and the difficulties that tear a human individual to pieces. An animal may become aggressive as a reaction to external problems or irritations that are too much for him; he may bite and fight the experimenter who was once his friend but who has betrayed him. But he is not torn between diverse inner impulses, harassed by feelings of guilt and remorse for misdeeds; he is not filled with a terror lest he do something against which he has built moral inhibitions. No one with the most fantastic imagination can picture an animal tormented about having committed an unpardonable sin and looking ahead to an eternity in which he must pay the penalty for his foolishness. An animal, in one of the experimental situations we have described, is thwarted by some external obstruction; a human being in a conflictual situation blocks his own needs, wants, or impulses by his own barriers. The animal can fight the experimenter when he is frustrated; the human being is fighting himself when in a situation of internal conflict.

Perhaps we can clarify the situation by a concrete illustration. If a dog is placed in a pen and sees an appetizing piece of meat just outside the bars of his cage, he will give unmistakable signs of his displeasure at being deprived of the food. If he could interpret his yelpings, clawings, and wild dashes across the cage, he might say, "I want the meat. Let me out of here. I hate you for keeping me away from it." He is frustrated and knows it and is doing all in his power to overcome the barrier between him and the food.

In human life we substitute moral training for the bars of the cage. We do not make a human being behave by keeping him locked in a cell; we teach him that he must go through certain prescribed activities if he wants to overcome the obstacles between him and the objects of his desires. He

must work, get money, and buy his food. A well-trained child will walk in front of a stand filled with the most tempting apples but will refrain from taking one, not because of any bars, but because his own internal moral code will keep him from stealing. His good behavior is the result of his principles of honesty overpowering his impulses to steal. Suppose the two are about evenly balanced. In such a case, the boy may feel himself literally torn in two parts. If he gives observable evidence of this internal battle, these signs will be in the nature of symptoms. These signs of internal struggle could take a great variety of forms. Let us confine our attention to a few of the simplest. He might repeatedly permit his arm to jerk out in the direction of the apple and then pull it back with another jerk. To an outsider these arm jerks might be a simple muscular tremor. Not understanding their nature, the observer might take the boy to a physician for treatment for the muscular condition. Psychologically his arm is representing his internal struggle. "Take the apple," says a part of him; and his hand jerks toward the fruit stand. "Don't you do it; that would be stealing," says his moral self; and his hand jerks back. "Aw! Forget it, you softie," says the tempter; and out goes the hand to grab the fruit. "You'll be sorry," says conscience; and back comes the hand. Finally, realizing he cannot stand it, he may run home as fast as possible to get away from the temptation.

But this is only the beginning. All kinds of events could follow and complicate matters tremendously. He could feel guilty because he was tempted. His self-respect takes a tumble. He could develop a phobia for walking down the street alone. He might come to hate apples; they symbolize his weakness. He might try to develop excuses for taking them without the purchase money. In fact, this book will be occupied with the host of things that the boy might do.

This principle should be clear. A frustration is a simple setup that may be interpreted as some need being blocked by some barrier. On the other hand, when the human individual has an internal conflict he is in danger of losing his moral integrity, and some more radical adjustments are called for than the mere satisfying of some specific elementary need. His whole personal integrity may be at stake.

42. Classification of frustration reactions. Hence, reactions to frustration may be grouped into two general categories on the basis of the degree of personality involvement. If a simple need is blocked, the individual may merely attempt to overcome that obstacle and fulfill that need. Such a reaction has been called need-persistent. When the entire personal integrity of the individual is threatened, and a more violent reaction is called for, such a response has been called ego-defensive. For example, the crying of a child when a piece of candy is taken from him might be considered a need-persistent reaction. If, however, the mother takes the candy from him and gives it to his brother, with the comment that the brother was good, whereas he was bad, he might hit his brother in jealousy—this would be an ego-defensive reaction.

Ego-defensive reactions to frustration have been further classified according to the direction taken by aggressive reactions. (a) Extrapunitive responses are those in which the individual, in anger and resentment, fights against the external persons or objects supposed by him to be the frustrating agents. (b) Intropunitive responses are those associated with feelings of guilt and remorse, which are directed against the person himself. (c) Impunitive are those reactions in which the individual attempts to avoid blame to anyone, either himself or others, and to gloss over the frustration. (Rosenzweig, 69)

The analysis of any frustrating situation should be regarded as an individual affair. That much seems clear. An external obstacle may tend to bring on aggression in a majority of persons, but it should be recognized that the same objective situation may produce quite varied reactions in different persons. One person may retreat, one may manifest anxiety, one may become stuporous, one may attempt an intellectual solution, and one may engage feverishly in some irrelevant task. One person may become sensitive to frustrations with each experience, and another may build up enough stamina to tolerate increasing amounts of frustration with each barrier he encounters. Conceivably, both the cringing jellyfish and the stalwart and persistent die-hard resulted from quite similar frustrating situations. The really significant explanation lies not in the fact that both were frustrated but

in those unique circumstances that turned the same situation to totally different final ends. (Britt and Janus, 8)

Two boys are knocked down by the breakers at the beach; one cries and yells for help, the other laughs and scrambles out himself. Two men encounter financial losses; one is beaten for the rest of his life, the other bounds back and starts a new business. Two girls are teased because of the fact that their boy friends jilted them; one becomes a soured spinster, the other sets out to become popular. Such individual differences illustrate the fact that every adjustment is the product of diverse factors interacting in most intricate fashion and that only misunderstanding can result from stressing one factor at the expense of others.

XI. ANALYSIS OF GENERAL ADJUSTMENT METHODS

Discomfort incites a person to act. Sometimes the discomfort is removed by automatic acts with little or no awareness of the process, such as pulling up a cover during sleep when the room has become cold. Some irritations are removed in a routine way with full realization as to what is occurring, as when we eat to stay our hunger. Some problems require deliberate planning; one has to contrive means for getting rid of the rabbits that chew the bark off the apple trees. Still other difficulties incite very definite conflict between various possible methods of action, and the individual finds himself literally torn between equally balanced impulses. For example, a mother discovers that her son has taken part in a robbery; shall she report him or shall she shield him?

43. Correct preliminary analysis essential for adjustment.

The prime requisite for a sane and orderly existence is the ability to evaluate each problem as it arises and to give it just the treatment it requires. What makes this most difficult is the fact that each problem is unique and its true nature may not be easily detected at the time that it needs to be solved. Some problems occur infrequently, some only once in a lifetime, and others recur periodically no matter how they are handled. A person may have to deal with mumps but once, but he will have to eat again and again regardless of how well or how poorly he is eating his present meal. Some problems, once solved, stay solved; others are solved on a contingent basis: the way they are to be solved depends upon previous decisions, and the solution of future problems will be influenced by what actions are now taken. Some situations had best be left to habit; others require intelligent direction.

What a mess some persons make merely because they cannot put a problem in its proper setting! A girl will spend hours and hours trying to decide on a hat to buy, but will take on a husband with a nonchalant shrug. Some tend to compartmentalize their lives and make one decision as though it had no relation to others; for example, a man will go to church on Sunday and engage in the highest type of moralization and then cheat a customer on Monday with no seeming compunction. When the inconsistency of his conduct is brought home to him in some manner, he seems totally surprised. Only a wise man can dispose of trivial problems with a minimum of effort, or knows when to delay decision, when to get a broad perspective, and when to discern the contingent social and moral issues. It is not the presence of a conflict that does a man harm but the mishandling of antagonistic factors. The mentally healthy individual perceives his goals and the methods for obtaining them in the correct perspective and has a feeling that he can solve his problems; the mentally sick person loses this perspective and is bothered by feelings of helplessness, which may lead to anxiety. (Maslow & Mittelmann, 52) The unbalanced individual sees mistakes after he has made them; the well-integrated person looks ahead and foresees errors before he has committed himself. In so far as a man fails to measure up to his own ideal of being wise in the handling of each and every problem he becomes vulnerable to mental disruption.

If these observations are correct, it should be apparent that the way to teach people mental balance is not to free them from conflict and frustration but to teach them how to meet difficulties. Where a conflict originated is not so important as what is done about it. The foolish man says that if such and such an event had not taken place as it did he would not be in his present predicament; the wise man is concerned with what will happen in the future if he acts in any given manner. The wise man learns from the mistakes he has made so that he can be more intelligent in the future; the foolish man doggedly repeats his mistakes with the unconvincing excuse that he is in a predicament and cannot do anything else but keep going in his mistaken way. He admits he is not acting wisely but argues that he is forced by circumstances to con-

tinue his folly. The first step toward being wise is to stop being foolish.

44. **Dual aspect of adjustment problems.** Every adjustment problem has two aspects. The first is what the individual is attempting to accomplish, and the other is the method or methods he is using to achieve his purpose. Trouble may arise from a faulty conception of aims; the individual may have distorted values, may be aiming too high or too low, or may have purposes that would only make for his unhappiness should he attain them. For example, the purpose of getting revenge for some real or fancied wrong is not likely to lead to any lasting happiness even if it is achieved. Trouble may likewise arise if a person is using a faulty method for accomplishing a perfectly laudable purpose. A student may legitimately aspire for an A grade, but copying from one's neighbor in an examination is usually considered a faulty method for getting an A.

Before a person can hope to adjust satisfactorily, he needs to have what may be called objective insight. He must know with some degree of clearness what his goals are; he must know the various possible ways of achieving these ends; and he must develop some skill in the use of those ways that offer the most promise of success. He must also have the insight to recognize that conflicts and their solutions are potentially bulwarks or threats to his personality and happiness; that his methods of solving his conflicts are attempts to protect or to bolster his own personality integration; that he is trying to overcome his feeling of helplessness or worthlessness and to rid himself of the fear of these. It is frequently the fear of failure to reach one's goal, even though such fear is uncalled for, that leads to what is called neurotic behavior, i.e., the adoption of ineffective behavior mechanisms to protect oneself. (Maslow & Mittelmann, 52)

A first element in such insight is the recognition that the outcome of our behavior is no indication of foresight on our part. The arrival at a goal is no proof that a person set out to reach it. He may be as much surprised as anyone at his success. The same thing may be said of failure. Furthermore, the fact that a certain outcome has resulted from some maneuver on our part should not be construed as evidence

that we have used the best procedure. Insight involves continual self-criticism, and such evaluation is not enhanced by concentration upon the outcome of an adjustment process alone. It is only natural to accept "windfall" profits with alacrity, but we do ourselves no service if we deceive ourselves into thinking that they result from our own foresight and skill. The student of human abnormalities never knows when to take behavior manifestations at their face value and when to regard them as disguises or masks.

45. Direct attack and alertness as an adjustment method.

Many problems can be solved easily and well by making a direct attack on them. No masks are involved and no subterfuges. If a boy's failure to make the debate team is caused by poor enunciation, he may seek instruction to correct that defect. This is a frequently used and perfectly normal method for making adjustments, but it is one that we must not overlook in our survey. Closely allied to the direct attack is the substitution of a method that will achieve one's goal almost as well, if not as well, as the original direct attack. Such a mechanism is called *compensation* and is often used with desirable results if not overworked. A familiar example is that of the boy who is not sufficiently robust to make the football team, but who becomes manager of the team. His goal of personal satisfaction through identification with the team is satisfied in a compensatory manner. Such compensation is not to be confused with what we prefer to call overcompensation; this will be discussed later, in Article 62. A direct attack on a problem calls for alertness to the problem and to the possibilities for solving it.

Alertness involves a wide-awake observation of all that is going on with an inquisitive poking around to see what happens when tentative moves are made. It is best illustrated by the ceaseless and unpredictable activities of a little child. To the despair of his mother or nurse, everything within range is a legitimate subject for research for him. He does not concentrate his attention on any one object for long because any new thing is a challenge for further investigation. In later life we restrict our interest and argue ourselves into thinking that concentration of attention is a problem-solving asset. It may be or it may not. If all the relevant material lies

within the range of our attention, then the restriction of attention is a valuable procedure. Sometimes, the key to the problem lies outside this restricted field and we fail to solve our problem because we are not elastic enough in our perceptions and exploratory activities. The balanced adult should know when to stress restricted attention and when to become alert to what may seem to be irrelevant items. Sometimes a person is just about to succeed and all that is needed is a little more persistence in following out his present hunches. At other times a person may be persisting in a wrong procedure; then concentrated attention is just the wrong method to use. Some mentally sick persons spend their time poking around in corners, in garbage pails, in getting into mischief in much the same manner as a crawling infant might do. Obviously this is not an intelligent type of alertness to possible cues for adjustment. Whereas the infant is learning by his exploratory activities, the adult who engages in similar pursuits may merely be evading a course of action by reverting to infantile patterns. The issue is not whether one is acting like a baby or like an adult but whether the conduct is relevant to the problem at hand. A student can become very inquisitive about how his room would look with the furniture shifted around when he does not want to study.

46. Adjustment by conditioned reaction learning. Most of the adjustments that we shall be concerned with in this text involve some degree of learning. Animals, children, and adults all adjust to many situations by conscious and unconscious conditioning, which is one form of learning. The way in which such adjustments may take place is illustrated by a boy's learning to refrain from eating green apples. In the first place, the appearance of a green apple may be a stimulus to hunger but not to stomach-ache. The boy eats the apples and gets a stomach-ache. As a result, on future occasions, the mere appearance of an apple is enough to arouse uncomfortable feelings of revulsion, and he does not eat. The visual cue, the appearance of the apple, is enough to arouse incipient nausea, and the boy does not have to go through the whole process of eating to develop feelings of antagonism for the apple. (Hilgard and Marquis, 29)

Conditioned reaction learning is, thus, a sort of generaliza-

tion from experience. Certain cues come to have meaning, and we react to that meaning because such a reaction has led to comfort or to discomfort in the past. A smiling mother comes to mean pleasure, and so the child may learn to respond favorably and make approaching reactions to his mother when she smiles; then he generalizes and responds favorably to others who smile at him. When someone scowls and the scowl is followed by displeasure, the child learns to avoid scowling people and to guard against them in some manner.

Such learning is very valuable, but it should be recognized that as we get older and our experiences increase, we will frequently find that we are reacting to the wrong cues. Hence, the normal adult learns to evaluate his cues on the basis of all kinds of evidence. He learns that not all smiles spell love. A smile may be the forerunner of an act of treachery. A kiss may be the signal of betrayal.

The important point to remember about using conditioning as a device toward the best adjustment to one's environment is that one may learn more from failures than from successes. If every smile you see means love on the part of the smiling person, you learn nothing discriminating about smiles. On the other hand, when one person smiles and cheats you, you are given an opportunity to discriminate between kinds of smiles or to note other circumstances surrounding the smile. You will be unintelligent if you now assume that all smiles are cues of betrayal, just as you may have been unintelligent if you formerly regarded all smiles as signs of love. Therefore, it does not pay to become incensed when a cue turns out to have a meaning different from the one your own limited experience made you expect it to have. You will not learn by feeling sorry for yourself, but by pulling yourself up with a jerk and becoming alert to the ways in which this present cue differs from similar ones you have experienced before.

In short, conditioned reaction learning is a sort of generalizing based primarily on frequency of experience. The best use of such learning requires that it be accompanied by intelligent discrimination.

47. Adjustment by random activity. When a situation is presented that furnishes no cue as to what response would be suitable, the only recourse left to an individual is to try any-

thing that may be available on the chance that the right response may be hit upon. The study of trial-and-error learning has been so much restricted to the solution of puzzles and mazes in the laboratory that there is a tendency to think only of such situations when trial-and-error learning is mentioned. Far from being restricted in any such manner, the solution of problems by random activity pervades many areas of human life. (Thorndike, 86)

The operation of this principle can be seen most clearly in the way infants and children learn to find their way around in the social world. The child may want some object or some favor that he can attain only when his mother chooses to give it to him. To be sure, he does not reason this out and set out purposely to win over his mother. He may not even know that his satisfaction is dependent on her. If he is deprived of some object, he performs, more or less at random, the various acts he finds he can do. He may yell, kick, throw things, pout, smile, or what not. If he persists long enough and is versatile enough, he is very likely to hit upon something that will bring his mother around. Usually the mother has no more idea of what is going on than does the child. All she knows is that when she "cannot stand it any longer" she gives the child what he wants. When the child performs acts that make no impression on the mother, he gets no results; when he hits on some act to which she is sensitive, she will respond. Thus, the child learns to manipulate his mother by performing the act to which she is most sensitive. There are more children who learn to cry than to laugh in order to attain something for the simple reason that there are more mothers who are sensitive to crying than to laughing.

48. Adjustment by inertia. Should the child find his mother's weak spot, what would be more easy than to use the same trick to manipulate his brothers and sisters, his father, his schoolteacher, and all others whom he meets? Such is the typical behavior of the spoiled only child whose major associations have been with his mother. He has learned one trick too well and is not versatile enough to try others when he finds that his pet one will not bring results. This illustrates a very common tendency, that of repeating an adjustment pattern that has once worked regardless of

whether it is appropriate or not. We are all subject to it. In certain areas these tendencies to go along in a rut are called habits. Whether they are simple or complex in structure, their effect on the individual is the same. In certain areas it is an intelligent performance to relegate our activities to routine; in others it is an excellent way to court failure.

49. Emotional factors in adjustments. Emotional adjustments are essentially emergency adjustments. When a person is placed in a situation for which he has no ready response, he finds certain mechanisms in himself called into play whose function it is to slow down or eliminate processes that can momentarily be dispensed with, and those stimulated that will enable him to deal better with emergencies. These mechanisms are controlled by a part of the nervous system known as the autonomic system and the processes evoked include increased breathing, increased heartbeat, increased tension, acceleration of the activities of such hormone-producing glands as the thyroid and adrenals, a slowing down of the digestive processes, and the calling out of sugar reserves. In their primitive form such reactions seldom conform to any rigid pattern. Instead, the picture is one of disruption. In such a state the individual is more likely than not to do unusual acts, thus making possible an extension of trial-and-error learning; he is likely to notice previously unobserved aspects of the total situation and thus be open to new forms of conditioning; he is shaken out of his complacency and so is less likely to favor adjustment by inertia. In short, emotional situations are the basis for the most radical changes in adjustment behavior and are consequently of the utmost value.

Like most valuable aspects of living, emotions may be misused. Consequently, in many adults we find signs of emotional babyishness, which is a continuation of mere disruption of behavior with minor reasons for such continual disturbance. Some adults enjoy being emotionally upset for such a condition serves as an excuse for failing to make a more intelligent adjustment. Some use emotional activity to influence others, and some learn a queer superficial sort of emotionalism that is really sham behavior. We shall deal with emotional adjustments in greater detail in a later chap-

ter, but it should be clear from the start that emotions are a valuable part of living, and the best indication of mental health is the proper use of this aspect of adjustment.

50. **Rational adjustment.** The rational man uses all the forms of adjustment we have described but he uses them at the right time and in the proper amounts. If the rational man finds himself in a burning building, he becomes excited and gets out the best way he can; he certainly does not sit down and ponder all the aspects of his dilemma. Having escaped, however, he does not spend the next ten years emoting about his experience; instead, he utilizes the event to figure out why he ever got into such a jam and how he can avoid a repetition of it.

Furthermore, just as all other valuable tools may be misused, reason is subject to the most extreme distortions and mishandling. The great majority of activities that go under the name of reason are the most blatant perversions of the reasoning processes. We shall deal with these in greater detail when we come to study delusions. The existence of delusions is the strongest argument in favor of the extreme importance of clear thinking.

XII. SOCIAL ATTITUDES BEHIND MALADJUSTMENTS

If all adjustments of mental conflicts were executed in an ideal manner there would be some definite meaningful connection between the issues involved and the methods of adjusting to them. Each person would take an objective attitude toward himself, would consider all the ways in which the difficulties could be reconciled, and then would proceed to organize specific methods for executing those activities. Since this is not the case, there is often very little sensible relationship between what the unadjusted person should accomplish and the things he actually does for the ostensible purpose of adjusting his difficulties.

51. **Background of poor adjustment procedures.** When lack of understanding of the situation is due to lack of experience, lack of perspective, or lack of intelligent insight, responses may be based on trial and error, on emotional stimulation, on inertia, or habit. That is to say, not knowing what to do the unadjusted person will take a chance, utilizing his own habit patterns as a reservoir from which to draw. Consequently, when a person is seen to be acting at random from some emotional stimulation, or in a simple routine

manner, one may guess that he does not know what to do and is taking a chance that some activity on his part will produce results.

There are many situations where even such a simple inference cannot be made. The individual's reactions not only have no logical connection with the underlying cause of maladjustment, but they are designed to disguise or to hide the real issue in some manner. That is to say, the primary purpose of the activity adopted is not to settle the main issue but to save the face of the actor. When a person cannot stand candor, feels helpless in solving his problem directly, he may use some mechanism that distorts facts so as to put himself in a good light.

Some such distortions have as their primary objective the misleading of the other person, and some accomplish self-deception, while of course many do both. No sharp line can be drawn between the two and activities that are begun because of their possible effect on the other person may rebound and end in the most complete loss of personal insight. For the present we shall confine our attention to attitudes and artifices that are designed primarily to deceive the other person. It must be recognized, nevertheless, that insight into motives is a difficult procedure, and so a device that is presented as though it were used with full awareness may also be used without understanding.

More important than the method used is the attitude behind the device. The masks we use, the roles we assume, in order to hide from the other person our real feelings and motivations, are quite varied and defy classification. Specific examples of some of these techniques will be given as each of the following attitudes is discussed. If the person understands and is proud of his attitude, he is likely to realize the purpose of his methods; if he misunderstands and is ashamed of his motives, then distortion and lack of insight are likely to creep into his interpretation of what he does. Hence we shall divide the various devices used for social adjustments according to several possible underlying motives. In each case, of course, it is likely that the person is making some attempt to keep his own feelings of worth and value intact and avoid what Horney has called "basic anxiety."

52. **A genuine desire to get along with other people.** Behind such a desire is usually a real fondness for others, and devices are used to avoid friction, to achieve fair play, and they usually follow a study of the interests of the other person. Recognizing that real friendship is based on the contributions of each person toward the increased happiness of the other, each act is measured according to its competence to contribute to this end.

Even with this attitude dominating an individual he may develop a slight imbalance. If you become too much interested in studying the attitude of the other person toward you, you may become fearful lest you lose the esteem of the other person. The ultrasensitivity thus developing may tempt you to make the other person afraid that he may hurt your feelings. That is, you learn to go around with your feelings on your sleeve and to enslave the other person through his fear that he may offend you. Such a device negates its purpose. How long will a person put up with one who continually makes him fearful of giving offense?

Another unfortunate consequence of the genuine desire to please people may grow from the conviction that others want us to be consistent. Once having taken a stand, we feel that we must stick. Even the most glaring evidence that the position should never have been taken is ignored; the more hopeless the situation becomes the more we feel that we must "cling to the wreck" with fanatical zeal. An antidote for any such mistaken notion might be a firm realization that all our friends probably know that it is only a fool who has never made a mistake.

53. **Mistrust of the motives of others.** Suspicion is a valuable attitude when one is dealing with a crook; but danger arises when it becomes a habitual attitude that makes it impossible for a person to deal in a straightforward manner with anyone. Suspicion is frequently connected with a mechanism called *projection*, which we shall describe in the next section. Since it may be a relatively straightforward attitude, we may well observe how it operates. Suspicion implies that we believe that the other person is not straightforward with us and impels us to attempt to outwit him. Every move of his is regarded as a sleight-of-hand performance, and so we use some

trivial feature to distract his attention from our purpose. When a trivial distraction fails, we may resort to something more serious. For example, a girl may tell a tale to make people suspect her in one area of living so as to cover up something worse. A boy will steal, permitting himself to get caught doing so, in order to disguise a tendency to commit an act that is much worse (according to his notions) than stealing. Many delinquencies in young people are based on this mechanism. (Healy, 28) The underlying principle behind such behavior, whether realized or not, is to get the other fellow before he gets you.

54. Hate of the other person. Since hate is an attitude that is in bad social repute, it must either be justified or must be disguised so that it does not appear in its true light. Hence, before we can hate openly we must put the other person in a bad light. We pick out his sins or his flaws and magnify them so that an "impartial judge" will vindicate us in our attitude and treatment of him.

In most instances, the person we hate has not been indiscreet enough to be vulnerable to such a direct attack; so we must use more indirect means to injure him. Since much hate is the result of jealousy, and since jealousy is in still worse repute than hate, a person needs to take the utmost precautions to hide his real feelings.

For example, a little boy who hates his sister will pretend the utmost love for her, will play with her most beautifully and by praising her skill entice her into a situation where she is likely to fall and sustain a real injury. If she is hurt, it is the result of an unavoidable accident.

Another way to hurt a "loved enemy" is by the subtle use of flattery. One woman was heard to remark to another, "What a wonderful dressmaker you must have. She actually made you look slim!" Still more cutting is the use of humor to insult the other person. Many wisecracks are rather thin disguises for obviously intended criticism.

55. Belief that success depends upon attaining a superior social position. Various elements enter into the establishment of such a belief. The little child is praised by his parents, relatives, and visitors for showing off to them. He is told that he will be liked if he is virtuous, studious, and the like.

Later on he is urged to develop a fine personality, which is taken to mean that he should have fine traits that anyone could admire. All this teaching adds up to the proposition that social success is measured by the degree to which we can get people to look up to us. Most people have to learn the hard way that this is a total fallacy. People do not want to look up to another; it gives them a pain in the neck to do so. The boy or girl learns this when he tries to strut before his companions. If he does not learn it, he tries to get into some position where others will be forced to kowtow to him. He knows no way to deal with others than to use his position to force them to submission.

If a person can create the impression that he is using his position in order to promote a worthy cause his position is strengthened. Thus he uses a fine social objective to conceal his desire for personal aggrandizement. Slogans, banners, and insignia are added to make the position more convincing. That these are successful is attested by the esteem we have for all such symbols of power. The same device becomes ludicrous when it is seen in the case of a boy who decorates himself with pop-bottle tops, or when the patient in a mental hospital decks himself out with all sorts of ribbons, and queer bits of metal.

56. Urge to overcome a feeling of inferiority or fear of rejection. Many circumstances can contribute to the development of a feeling of *inferiority*. Prominent is the conviction that one is not wanted by one's parents. This may be caused by thoughtless statements made by them, by harsh methods of discipline, by signs of favoritism for a sibling, or the like. Whether there is a real rejection by the parents, or whether it is merely the product of a child's imagination, the results are quite similar. Other factors that contribute to inferiority feelings are failure in competitive situations, realization of some physical deficiency, personal remarks and comparisons, and ridicule by companions.

Various responses may be made as a result of such an attitude. The individual may chatter about his mistreatment to gain sympathy. He may become socially aggressive, virtually retaliating against those whose love he would most prize by doing mean tricks to them as a sort of punishment. A child

who feels rejected by his mother may torment her unmercifully. The mother, thus treated, may interpret his conduct as the result of hatred for her, whereas he is telling her in a very blatant manner that he wants her love.

Oftentimes, a child who fears rejection will manifest an extreme display of selfishness. He is virtually saying, "Since you do not love me, I will live for myself." The fact that this is not genuine selfishness can easily be demonstrated. Let the person whose love the child craves make loving responses and such shallow selfishness will quickly disappear.

The company of the person whose love is craved may be shunned for fear of a snub. This seclusiveness may carry over to other situations and the child may be judged to be non-social, to have no interest in others. He will soon abandon such seclusion with a little recognition and flattery. The person with an inferiority feeling is especially sensitive to a compliment. On the other hand, he will tend to avoid any sort of competition because he fears unfavorable comparisons. (Shaffer, 79)

Obviously, the best way to overcome such a feeling of rejection in a person is to give him a chance to contribute to others and thus give him the assurance that others need him. These children will put out all sorts of bait for a compliment and will get in the way and become nuisances in their effort to prove that they are useful. Carried over into adult life, such conduct is even more misunderstood than when it appears in children, and the treatment accorded these persons is seldom calculated to give them any reassurance.

XIII. SOME DEFENSE MECHANISMS

There is no limit to the number of ingenious devices man contrives to deceive and defend himself. Since man's sanity is largely due to his freedom from any such practices, a queer paradox results. Man literally invents ways to destroy his insight into himself and thus to bring about his own mental disruption. Since all the mental disorders to be treated in this book depend upon lack of insight indicating a lack of conscious understanding we cannot give any exhaustive account of the kinds of mechanisms of deception at this point. What we can do is to give a sketch of the different general methods that are found in clinical work, and this skeleton can be filled out later in our discussions of the various forms of mental disorder.

Defense mechanisms may be grouped into five general patterns: (a)

distorting the way in which experiences are perceived, (b) controlling memory processes in such a way that the undesirable events are forgotten, (c) building up apparently logical support for events and impulses we favor, (d) keeping alive those emotional situations that give us satisfaction, and (e) saying and doing those things that give us satisfaction and then making those activities seem the noblest.

57. **Distortion of perceptions.** The most basic way to twist our perceptions is to be insensitive to those sensations we choose to ignore. We can be blind to what we would not see, deaf to what we would not hear, anesthetic to what we would not feel, and so on through all the sensory fields. Failing in such a radical departure from reality, we can distort what our sense organs bring to us, interpreting it in any way we see fit. Fear can make us interpret a scratching noise as a burglar prying at a lock; guilt can make the hissing of the wind seem like the voice of Satan upbraiding us; or the desire for a departed friend can enable us to hear him talking to us.

More subtle are those misinterpretations that do not come so close to the sensory experiences that give rise to them. Thus we may attribute to others those tendencies or traits we feel within ourselves, a mechanism that has been given the name, *projection*. For example, I might hate another and desire to do him harm but, instead of recognizing this attitude in myself, I twist it around and attribute this attitude to the other person. Instead of admitting that I hate him, I can discern nothing but his hatred for me.

A counterpart of this mechanism is one called *introjection*. This term is used to indicate the reaction to another person's tendencies or wishes as though they were our own. It is the attributing to oneself of those qualities one finds in others and desires to possess. Or introjection may mean that the person has gone beyond the simple attempt to explain personal interactions and interprets unwelcome thoughts and impulses as the result of the influence of other persons.

58. **Distorting memory processes for personal ends.** *Repression* is the name given to the active attempt to forget an experience or an impulse. Such items are not completely forgotten, for they may be recovered under the right conditions, and even when they are absent from consciousness, they may still exert a dynamic effect on the thinking and actions of an individual. A person can forget appointments he does not

wish to keep, can misplace letters he does not want to answer, or can forget the name of one whom he wishes to snub; and his poor memory can take the blame for it all.

59. Self-deceit through twisted logic. The process of devising ostensible reasons to justify an act or opinion that is actually based on other grounds, has been given the name of *rationalization*. Usually the distortion is not recognized by the one who uses it. Reasoning is particularly vulnerable to distortion because few persons know when they are reasoning correctly, and truth is relative anyway. Hence, where a number of factors are operative in a situation, who is to know when the emphasis given to one of these is the result of a clear grasp of the whole setup or to a desire to weight that factor? A prolonged argument, few persons will realize, is merely a device to conceal emotional prejudices.

These distortions range all the way from a trivial distortion of emphasis to the development of false beliefs that have not a whit of truth in them. The fox who could not get the grapes by-passed the chagrin of failure by saying, "They were sour anyhow; who wanted them?" The student who cannot make an honorary fraternity may kid himself into thinking that such organizations have no value anyway.

Or, an unfortunate event can be glossed over by saying it might be worse—the sweet lemon mechanism, sometimes called the Pollyanna attitude. Many adults use no more intelligence in being honest with themselves than the little boy who was told that the first bite of grapefruit would be sour but that the next ones would not be so bad. He calmly took the first bite and laid it to one side and proceeded to eat the rest. Asked why, he replied: "Well, you said the first bite would be bitter so I decided not to eat the first bite."

60. Keeping alive pleasant emotional experiences. The name given to this device for self-deceit is *emotional regression*. As a result of some present frustration, some disappointment, or some painful experience, a person may attempt to relive a previous situation where he was in happier circumstances. The boy who is jilted by his girl may revive his intense love for his mother and thus temper his chagrin over his romantic debacle. Such regression does not entail living out in its entirety some childhood situation; it merely is the

attempt to revive the emotional aspects of the previous experience. To be sure, such emotional regression may be an accompaniment of more severe types of withdrawal, which we shall discuss in a moment, but the self-deception of emotional regression is a very effective device and is used in a great number of different situations. Related to emotional regression is *daydreaming*, which may lead to phantasy. Everyone daydreams at times; such behavior tends to enrich life and may even lead to creative imagination. But when we live in a world of make-believe instead of one of reality and receive our satisfaction from imagining solutions to our conflicts instead of making a real effort to solve them, daydreaming assumes proportions of abnormality. Daydreaming is also a kind of substitute behavior and will be mentioned again in the section on substitution as a means of adjustment.

61. Twisting the significance of what is said and done.

The little girl who really is pleased when a boy kisses her but who does not dare admit the fact to herself may react by getting angry, telling on him, and getting him into trouble. The intensity of her fury against him is the product of how much she really enjoyed the kiss and the amount of resistance she feels she must offer to such an acknowledgment. This mechanism has been called *reaction formation*.

Closely allied to this is the attainment of satisfaction from one pursuit when denied some other occupation. A woman deprived of motherhood may gain substitute satisfaction from nursing or from teaching school. When such a substitute occupation is socially approved or even has a supposedly higher cultural value than the one that has been denied outlet, it is called a *sublimation*. Usually one does not recognize that the real pleasure derived from the overt activity is really transferred from the forbidden one.

62. Adjustment through substitution. Adjustment by substitution is a sensible and beneficial procedure when it is done with conscious analysis of the whole situation and the substitute is not too inferior in value to the relinquished aim. Conversely, where there is little insight into what has been done, or where the individual feels a definite loss through the exchange, the mechanism of substitution can be very detrimental. Sometimes substitutions turn out surprisingly well;

what seemed to be a definitely second-rate alternative may bring more satisfaction than the original objective. This points the way to the wisest use of substitutions. If a little ingenuity is used, the alternate may be transformed into the superior article. Being forced to make synthetic rubber, manufacturers developed substitutes for natural rubber that are more effective in certain spots than the original. Working against this sensible procedure is a tendency to overvalue what is denied us. Articles seem more desirable when the price is going up and they are harder to get; conversely, they seem of less value when the price is going down and the supply is adequate. A coveted article seems more worth while than the same article in our possession. When a man gets over this inane way of appraising objects and goals, he is on the way to making the best use of the mechanism of substitution, and he will get more value from life. The man who finds he can get as much enjoyment from oleomargarine, if need be, as from butter is much better off than the one who says, "If I cannot get butter I will do without. No substitutes for me."

When the person who substitutes feels a definite let down because of his relinquishing of his original goal (whether he is aware of such an evaluation or not), he is likely to disclose his attitude by *overcompensating* in his enthusiasm for or display of his substitute behavior. A person who has suffered some calamity, such as the death of his best friend may substitute an artificial cheerfulness for his grief; he may attempt to forget by feverish activity; or he may seek solace in religion and become unusually interested in the church.

A person who has not succeeded in his chosen occupation may make up for his failure (overcompensate) by the excessive pursuit of a hobby, by seeking expertness in some game of skill, by losing himself in literature, the theater, the movies, or in passively watching others partake in athletic contests. Others may project their ambition upon their children and attempt to see to it that the children make up for their own ineffectiveness. Others engage in some sort of social reform, *identify* themselves with some political or business leader who is an acknowledged success and thus gain some reflected glory. Still others make up for their deficiencies by living in a world of *phantasy*. The girl who fears she will

never be able to get the right man envisions herself as the idol of some prince charming. The boy who is teased by all the others in the neighborhood imagines himself as a great conquering hero. The forms of such daydreams are as varied as the hosts of human disappointments.

Some children who have a difficult time socially make an adjustment by clinging to a dog, a cat, or another animal. They may choose companions much older than themselves in order to get unmerited consideration, or they may select those who are much younger so that they can lord it over them.

One of the most unwholesome types of substitution occurs when the individual takes on the symptoms of some actual ailment in order to hide from himself and from others the real nature of his maladjustment. We are all acquainted with the little white lies that are told to escape certain obligations. A person who does not want to accept an invitation can always get out of it by pleading the excuse of a headache. In pathological cases the individual actually has the headache and has all the symptoms that go with it. Practically all physical diseases—including all sorts of skin disorders, alimentary disorders, paralysis, sensory losses, tumors, ulcers, and the like—can be simulated by individuals who need them to evade some mental adjustment. In assessing such symptoms one must distinguish between a downright lie with no attempt to feign symptoms, malingering where the person deliberately pretends to have the disorder, and true conversion symptoms where there is enough evidence to deceive even a good physician. More will be said about this mechanism in the section on *hysteria*

XIV. ATTEMPTS TO AVOID ADJUSTMENT

The devices we have considered up to this point involve some sort of active attempt to meet the difficulties of living or to work out some sort of compromise. Those that remain involve some sort of attempt to get away from the battle arena. They range from evasions, through substitution and withdrawal, to defeat.

63. Evasions or persistent non-adjustive reactions. A difficult problem or a crisis calls forth a great amount of reserve energy that gets the individual ready to make unusual re-

actions. Should any of these reactions bring about a solution to the problem or a reduction of the intensity of the crisis, the natural result would be a lessening of the emotional tension. The effect of emotional upheaval is the instigation to do something. At times the individual gets no further in such activity than the incipient stage. The result is a high degree of tension with the withholding of any activity designed to relieve the strain. Individuals in such a state are described as worrying or anxious. Such a person manifests all sorts of diffused motor activity, such as chewing his nails, drumming on the table, making marks on a paper, pulling his ear, scratching his head, and the like. He expresses dread and fear and talks of his own inability to do the right thing. He may lose his appetite, spend sleepless nights, become irritable, develop aches and pains, be unable to work, and may become excessively tired. Instead of using his emotional tensions to make some adjustment, he remains in a condition of non-adjustment. He thus avoids making a mistake; for he can hardly go wrong if he refrains from doing anything. But he is not avoiding his difficulty by any such conduct. Refusal to do anything is really making a response—inadequate though it is.

The prolongation of the period of non-adjustment as a method of adjustment takes a great variety of forms. A person may dawdle on the job, he may refuse to make a decision, he may talk incessantly about his fears, he may repeat some ritualistic act again and again, or he may keep on doing what he has done for years although it is thoroughly inappropriate. Although most persons who entertain chronic anxiety complain about their predicament, those who have to put up with them can see quite clearly that they often really enjoy their emotional intemperance.

64. Adjustment by withdrawal. Withdrawal from a situation that has become intolerable may be a wise move if it is temporary, if the period of retreat is used to prepare for a more aggressive adjustment, and if it does not lead to a loss of confidence. When a withdrawal is accompanied by attempts to distort the fact so as to avoid admission that one has been overpowered, then real confidence is sure to suffer and the period of withdrawal is likely to be extended. Therefore,

the important aspect to be studied in any case of retreat is the possibility of loss of insight. Any of the mechanisms already discussed as encouraging self-deceit can be used in connection with withdrawal and we will not again refer to those. There are, however, certain kinds of distortion of facts that seem to go hand in hand with withdrawal. Some of these have a sort of intellectual tinge; the individual attempts to make his withdrawal seem to be the logical and sensible procedure. Logic-tight compartmentalization of thinking is very common. The individual sees no relation between his present activities or status and the situation from which he is running. Some illustrations of withdrawal are: drug addiction, alcoholism, resignation (perhaps justified on religious, philosophical, or political grounds), wild recklessness, libertinism, and travel. The fact that such ways of living may be motivated by a desire to retreat from real life should not be interpreted to mean that anyone engaging in any of them is retreating. There may be many other reasons for doing any one of them.

More dangerous than any of the above methods of withdrawing is that in which the individual develops a profound indifference to life in all its aspects. He lives with people but separates himself from them. He engages in the business of living without being a real part of it. This is the characteristic pattern of the person who is usually diagnosed as having some form of schizophrenia.

65. Adjustment by defeat. There remains the possibility of being completely defeated. Defeats may vary in the degree to which they are permitted to control the situation. Some are temporary and some are permanent. The most transient form of defeat is such that a person backs away from his difficulty by the excuse of some pretended mental illness. This condition is given the euphemistic title of nervous breakdown. There is no such disease entity as "nervous breakdown," but the term serves as a convenient excuse for giving up temporarily until a person gets his bearings and can come back again. Most of the disorders called psychoneuroses are temporary conditions that serve as a means of escape. More serious are the psychoses. In the psychoses the individual finds a type of reaction that he adopts as a sub-

stitute for a real adjustment. He is adjusting, but it is an adjustment by defeat, and the functional psychosis should be regarded as a flight from reality into a mental disease. Steps should be taken to get the patient to change the direction of his course back to reality before he becomes too set in his psychosis. Some psychoses are more likely to become chronic than others but, in any case, early treatment is called for.

The final type of defeat and the one that is most serious is suicide. It is the most serious because it is an irreversible step.

XV. HOW TO BE HAPPILY MALADJUSTED

As long as man lives he is never adjusted in the sense of being free from conflicting forces. This should be clearly understood. A person resolves one problem only to find himself confronted with another and another in endless succession. Learning to solve one problem does not relieve him of further complications; it merely makes it possible for him to take on more and bigger problems. Insight is not designed to help us avoid the issues of life but to handle each succeeding one in a more efficient manner and to learn to enjoy doing so.

The objective of the full life is not to become adjusted but to learn to enjoy the process of continually readjusting. The full life gives one no time to gloat over success nor to bemoan failures. The wholesome man is too busy learning from both to waste much time in reliving his past for the sake of the emotional satisfaction he gains from such ruminations. He looks back only to get hints for the future. Life is one continual turmoil. We get bumped, pushed, and bruised, and sometimes we look and act much worse for the wear. The question is: Can we take it and come up smiling for more? That is the real measure of the man. Should anyone see one of us just after we have been mauled, he might get a poor impression of our ability to take it. We might even be discouraged ourselves if we looked at ourselves too critically. But the real judgment should come only through a long-range view.

Success is a profound misfortune if it tempts a person to

spend the rest of his life congratulating himself. Failure may be a great boon if it teaches a person to make a better showing the next time. Neither success nor failure is as important as the attitude of the person; it is his attitude that determines whether or not he is living a wholesome life.

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CHAPTER III

PERSONALITY DIVERSITIES

A well-adjusted person in our culture should have a healthy body, normally acute sense organs, balanced perception, a good memory, sound judgment, rational thought patterns, emotional balance, and motor control; but in addition to each of these he should have a harmonious coordination, or integration, of all phases of his being so that he may feel worthy both personally and socially. But an integrated individual never remains at rest; quite the contrary, such a person is a dynamic, growing entity who is continually changing as a result of the various experiences he meets. In such a growing being we can discern certain tendencies or trends, but each normal individual is always changing front, realigning trends, so that a description of him today may not hold tomorrow.

We shall find that one of the characteristic features of the abnormal individual is that he tends to lose this resiliency of personality; he settles into a rut and finds his life guided by silly habits of acting and thinking. Anyone who observes him can predict that he will be just as foolish in his behavior tomorrow as he is today. The normal man may perform idiotically today, but he should not continue to be exactly the same sort of fool on each succeeding day. The wholesome man permits routine to guide his life only in simple affairs where little is involved; whereas the mentally sick man, after adopting an unfortunate pattern of adjusting, continues to act according to that pattern, even when such conduct is obviously inappropriate.

66. **Illustration of an abnormal personality.** The following letter, received by a prominent college athlete, is presented here to illustrate the abnormal attitudes of an individual who lacks insight, who has not the ability to exercise a normal amount of self-criticism. The letter itself was crudely written

with a pencil, but "The New Bible" and "The Lord's Prayer" were neatly printed on a large sheet. It is not unusual to find persons who will go to the trouble and expense of having such nonsense printed and distributed.

Dear sir:

I have mailed these Bibles to coach and to coach and asked them to aid me to get work as janitor and offer to aid them free—Neither one answered my letters and both Chicago and Indiana University failed in foot ball—If you wish to aid your basket ball team can you get me a few hours work each day in helping in care for the Gymnasium at your school—I can aid your basket ball team and baseball team free and can prove this the first games you play—Purdue and Indiana University have ignored these Bibles—They also have shown no intention to give me work—If this continues I should think Purdue and Indiana will be on the joke column.

Talk this over with your team mates and write soon

THE NEW BIBLE

....., born near, Indiana, Aug. 25, 1874.

Name

I am the God

I second him.

Universal salvation is the truth. The moment we die we go to heaven to live the eternal life. Our Hell we create for ourselves here on earth. I will use the elements to punish the people if they sin. The elements consist of cyclones, droughts, floods, earthquakes, extreme cold, extreme heat, lightning, hail and sleet storms.

The good weather will be given to the people if they tell the truth and lead a clean moral life. These rules can be used for reform:

We shall not deceive.

We shall not gamble.

We shall not murder. -

We must be honest.

We shall not steal.

We must be industrious.

We shall not commit adultery.

We must practice economy.

We shall not have divorces.

We shall not drink any alcoholic beverage.

All people of good health shall marry and raise a family. If we remain single there must be no adultery. This means there shall be no sexual intercourse except between man and his wife. We shall not pay any minister, priest or any reformer in the church. All church workers must be volunteers. There shall be but one church for the people of this earth. This shall be the Universal Church. This is the proper name for the church, for all the people of this world will be saved. There is no punishment after death.

Remember the Golden Rule, "Do unto others as we would have others

do to us." Jesus Christ is not the Savior. This is Christ's Prayer and this proves that the God is the one to save the people.

THE LORD'S PRAYER

Our Father who art in heaven, hallowed by thy name, Thy kingdom come. Thy will be done on earth as it is in heaven. Forgive us our trespasses as we forgive those who trespass against us. Give us this day our daily bread. Lead us not into temptation but deliver us from evil. For thine is the Kingdom, the Power and the Glory forever—

Christ admits in this prayer that his father has his own way in heaven and prays for his father to have his own way here on earth. This will be done if needed. We shall not eat, drink, or do anything that will injure physically, mentally, or morally.

NOTE:—Divorces might be granted in case either party has a dangerous venereal disease like Syphilis.

The printing of this Bible in county or state newspapers or the use of this Bible in churches so the people of the world will know the truth will in case of heat or drought bring rain in 24 hours. This can be done for two years but in this time the people must start a sincere reform. The truth and good morals will insure good weather. If we acknowledge the truth as stated this will aid the doctor in curing any disease that is curable. Missionary workers might be paid living wages to work in slums and among the illiterate people. No paid speakers in the churches of any educated people. Our work shall be well done.

I suggest reform by education and by law and law enforcement. All social evils should be corrected by law.

I created, and control the movements and position of the earth and all the planets. I gave life to every living thing. We should work six days and rest on the seventh day.

Obviously such a person's personality must be at the extreme end of our curve of normality. Let us look further at this concept of personality.

XVI. DEFINITIONS OF PERSONALITY

Personality is so complicated, it has so many facets, and it changes so continually that it is difficult for any one investigator to present a completely balanced picture. Consequently, the definitions of personality, the methods that have been evolved to study it, the analysis of the differences between persons, and the concepts that have been advanced to explain personality are sure to be tinged by the viewpoints of each separate writer or experimenter. One article states cynically that "there seem to be virtually as many definitions of personality, character, and temperament as there are writers on these subjects." (Allport and Vernon, 7) Could not this variability in definition be interpreted as the result of the attempt to achieve the impossible? Human personality is

too elusive to be restricted to any definition. It is quite likely that each definition advanced contains some truth, and it is just as likely that no definition, no matter how excellent it may be, can be entirely satisfactory. Consequently, a review of definitions becomes a survey of different viewpoints, each of which may have some merit. (May, 76)

67. **Stress on inner mechanisms.** Many students have been inclined to place great stress upon the hidden aspects of personality. A man may smilingly and graciously shake your hand while plotting to murder you. The outward act is superficial. If you could only see inside the man, if you could read his thought, and if you could understand his feelings toward you, you would be getting a glimpse of the real man and could act accordingly.

Even among those who agree that the hidden aspects of a man are his most important assets, there are wide variations of opinion as to what are the foundations of these inner mechanisms. Such things as tropisms, reflexes, habit patterns, muscle tensions, tissue needs, metabolisms, hormones, and the like are considered as fundamental; or on a less objective foundation such concepts as instincts, impulses, urges, drives, complexes, motives, and the like are used to explain the nature of the hidden personality.

Some investigators are interested in determining the relative value of some one of the many aspects of the inner life; others are concerned with disharmonies and inconsistencies in their manifestations. Students of abnormal psychology customarily have been interested in various manifestations of internal disunity. Some observers believe that external behavior is used as a screen to hide from the outer world the true nature of the inner self. Whether behavior masks are designed consciously to deceive outsiders or whether they are adopted unwittingly, many persons with widely diverse interests have come to believe that it is more important to understand the foundations of human actions than it is to analyze and describe the specific things a man does. What a man does is now commonly considered merely a symptom of what is happening behind the screen of his overt conduct.

Whereas some have thought that the inner man is an unlearned element of personality, most writers are of the opinion that it is the product of growth in the individual himself. The opinion is now becoming widely accepted that

each person, more or less unwittingly, takes on a role as the result of the unification of many experiences. Such a role may be centered around a formulated code for living, or may be essentially a role assigned to him by others and one that he accepts more or less completely. At any rate, the normal man does develop into a relatively well-integrated being who does not surprise himself or others too much with his inconsistencies.

The regularity with which such integration is found is made clear by observing some of the exceptions. These have been called dual or multiple personalities. They are individuals who manifest, at different times, patterns of behavior that the observer cannot believe could come from the same person. For example, Morton Prince (89) describes his B.C.A. case as a person who in personality A was irritable, timid, graceful, loving, sympathetic, easily humiliated, melancholy, frugal, serious, and neurasthenic; whereas in personality B she was hearty, mischievous, indifferent to people, self-sufficient, happy, extravagant, playful, and vigorous. (Taylor, 113, p. 289)

Sometimes, the differences are in specific areas. For example, a famous case was reported to be a respectable lawyer when one personality was dominant, while the same person was a destructive gambler, swindler, and thief at other times. Another person was sensitive to pain in one personality and insensitive in the other. One was paralyzed when one part of her self was dominant and normal in her motor activities with the other part in control. Even more extreme in contradictory behavior was the person who was ambidextrous and understood only English when one aspect of her personality was dominant, but who in her other phase was left-handed and spoke Welsh. (Taylor, 113, pp. 289-90)

Dissociated personalities appear in many forms. When the disparate personalities function only one at a time, each such aspect has been called an alternating personality. The term multiple personality is used when there are more than two rather distinct organized aspects in one person. At the same time, a person may be disunified and still not present a relatively complete individuality in each aspect of his existence. Instead of being split into two or more clear-cut units, as an

apple is divided into two or more segments, he is more like humpty-dumpty after his fall from the wall—he seems to be shattered into bits which any one would despair of putting together. Such personalities are found in some types of schizophrenia.

These variations in the completeness with which inner unification is accomplished in different persons all point to the importance of individual development as a factor in personality formation. Whether the final role that the individual adopts is a single one with consistent and understandable manifestations or a dual or multiple role with incomprehensible contradictions, the personality comes to him from out of his own history. He may take it on by the process of trial and error, by the imitation of others, from suggestion, as the result of some particular conflict, or as the result of the cultivation of incompatible habits; but it becomes comprehensible only when viewed as the outcome of individual learning.

Possibly these cases of multiple personality have chosen to adopt a course of inconsistency as a reaction against an overemphasis on the part of society for adherence to some unified role. Perhaps unification of personality is not the unmitigated virtue it is supposed to be. Could it be that others demand consistency from us so that they may find it easier to predict what we are going to do and thus be able to control our behavior? Could it be that these extreme cases of multiple personality are demonstrating that they are too smart to be victimized by those who would make them consistent and thus an easy prey to their manipulations? A further study of personality may give us more light on this question.

The inner and hidden part of a man is important, and we can know little about a person unless we understand what is hidden behind his overt conduct—that much seems clear. But we should also remember that we gain little by assuming knowledge about the inner self when we really possess nothing but ignorance and, likewise, that we do not dissipate this ignorance by bandying about certain terms that serve only to confound our confusion. Many students of the “inner man” have suggested hypotheses for explaining the workings of the personality and have devised a certain lingo for dis-

cussing these hypotheses. Much clinical and experimental evidence has been amassed to substantiate or disprove such hypotheses, and this is all to the good. But certain individuals seem to feel that the terminology developed in such studies is adequate to explain both normal and abnormal personality manifestations. The student of abnormal behavior would do much better to learn to say "I don't know" and to hunt for more evidence as to the source and significance of behavior than to lull himself into complacency by seeming to explain it with some vague or meaningless word or phrase. This text will attempt to leave such terminology and the study of its concepts to the more advanced student wherever possible and feasible.

68. Stress on external circumstances. Confused and irritated by the difficulties encountered in the study of the hidden aspects of personality, other students have given undue emphasis to what can be observed and measured. They see the foundations of personality in group codes, social standards, family adjustments, living conditions, economic standards, customs, mores, types of language, beliefs, superstitions, and other social traditions. Common opinion has emphasized social influence in the development of personality for ages, and it is no wonder that scientific workers have been influenced by this viewpoint. When a boy goes astray an easy explanation is that he has been in bad company. Adam sinned because he associated with Eve, and Eve fell because she followed the suggestion of the snake and ate the apple. If there had been no snakes in the Garden of Eden, perhaps we all would still be living in the original paradise.

There can be no doubt that a man is partially the product of the environment in which he grows. No one develops in a vacuum. But it is just as erroneous to explain all personality as the product of the environment as it is to assume that a man will grow to be the sort of man he is by virtue of some internal principle regardless of the external pressures to which he is subjected. The degree of emphasis is primarily a matter of taste, and each investigator has a right to his own preferences. He should not, however, confuse his tastes with facts; preferences may distort the truth.

Moreover, environmental influences are subject to elusive subtleties almost as confusing as those that surround inner mechanisms. One person may have developed an immunity to a social influence to which another may be very sensitive. For example, two children were told that a certain athlete (XY) was able to perform as he did because he did not smoke. One child responded with a determination to refrain from smoking, whereas the other said, "Who wants to be a stiff like XY?" But even without the development of such different ways of looking on external events, an environmental influence that seems to be essentially the same may be quite different in some subtle respects. Two children in the same home, attending the same school with the same teacher do not have the same environment except in a very superficial sense. There are subtle psychological differences that can only be discovered by indirect methods. There may be favoritism on the part of the parents, jealousy between siblings, and differences in the reactions of other persons, both inside and outside the home, to the two children. Cases of identical twins showing the effect of such psychological differentials in a seemingly similar environment are rather frequent. One twin may be aggressive and the other submissive, one may have developed the tendency toward a certain type of abnormal behavior not found in the other.

69. Emphasis upon harmonious components or factors.

Other students of personality have given their major attention to the attempt to sort out the multitudinous factors, which seem to be involved, into some sort of logical or functional arrangement. Here, again, one is never sure whether the outcome of an investigation is the inevitable result of the structure of personality itself or of the particular bent of the writer.

One very common practice has been to select some aspect as the elementary unit of personality and then to define personality as the sum-total of all varieties of this unit. For example, if habits are deemed the outstanding feature, a personality is conceived as the sum-total of a person's habits. (Valentine, 119) If traits are selected as the element from which personality is built, the sum-total of traits is taken as

a true picture of any person. (Burt, 19) Those who do not like this type of procedure ridicule the method by calling these "rag-bag" definitions. (MacKinnon, 74, p. 4)

If an investigator cannot tolerate the presence of disorganized bits of personality, he is confronted with various alternatives. (a) He could devote all his attention to one of the bits and ignore the rest. (b) He could attempt to get a perspective by backing away from too close an inspection in much the same manner that one may escape the intrusion of brush marks in a painting by removing the painting to such a distance that they cannot be seen individually but lose themselves through absorption into the entire painting. (c) He could tease out all the elements and then study the effect of putting them into various combinations. (d) Or he could give his attention to the various groupings of elements as they appear in the form of so-called traits.

The distinction between these various options will become clearer when we discuss the methods for studying personality in the next section. Some of these have been more fruitful than others, but in fairness it must be admitted that all have made some contribution and each has its own distinctive value. The student needs to utilize whatever he can gain from any and all methods and should not feel any necessity for becoming a partisan.

XVII. METHODS FOR STUDYING PERSONALITY

A great many different devices have been used to derive objective measurements of personality. For purposes of discussion these may be grouped into four categories: (a) subjective evaluations, (b) personality tests, (c) analyses of the imaginative productions of the individual (Lerner and Murphy, 69), and (d) clinical procedures. (Brown, 17)

70. **Subjective evaluations of personality.** How much can be told about a person by determining what others think of him? After such opinions have been collected how much confidence do they merit? It is well known that personal opinion of others is warped by the viewpoint of the one who renders such a judgment. Friendly evaluations are likely to stress qualities that will be the opposite of those selected by an enemy. An employer's evaluations may be different from those given by a close relative or by a fellow employee. A

professional worker—a social worker, psychologist, or psychiatrist—will attempt to give an unbiased opinion, but even his judgments are likely to be influenced slightly by his particular professional interests.

These difficulties have discouraged many scientific workers. Others have made various attempts to use subjective judgments in spite of the difficulties involved. The two most important of these for the study of abnormal individuals are *interviewing* and *rating methods*. Both the patient and other informants may be interviewed, but ratings are ordinarily obtained from informants other than the patient.

Tremendous strides have been made in recent years in the techniques of interviewing. Older procedures were not very far removed from the methods of an inquisition. The patient was always on the defensive, and the interviewer took on the role of a busybody probing around where he seemed to have no business. An interview conducted on such lines was a sort of contest. The interviewer fought with the subject of his investigation to get information which the latter tried his best to conceal or to distort. Obviously any evaluation based on such a procedure was faulty. Even when this situation was recognized as ineffective and attempts were made to give the subject of the interview some freedom, the methods of securing any such goal were rather crude. For example, one young psychiatrist, just out of medical school, having been told he should listen to the patient instead of talking to him, developed the pattern of coming into the patient's room with a notebook and pencil; after seating himself and getting his pencil poised above the paper he would say: "Well, commence talking." Such an approach made the patient feel more like hitting the physician than confiding in him.

The good interviewer is more concerned with other more subtle factors than making accurate notes of just what is said. If this means not taking notes, then no notes are taken until after the patient is gone. In many cases, however, the skillful interviewer can secure good rapport and at the same time make notations, especially if there is no appearance of trickery involved and if the patient fully understands that the notes are for the use of both interviewer and patient in helping to understand his problem. In order to be on the safe side, how-

ever, many interviewers avoid note-taking entirely during the process of the interview. The interviewer's first job is to make the patient feel at home, to build up rapport between the patient and himself, and to get the patient into a mood in which he wants to talk. He certainly cannot permit the patient to feel that he is making sly interpretations of every gesture, every intonation, and every little thing that is said. Any interviewer who gives a patient the impression that he is a smart man who can see through the patient will not get very far in working with that patient. If he probes around with supposedly subtle questions, he is more likely to get opposition and distortion than if he permits the patient to select his own subjects and to deal with them in any way he wishes. The ideal interview is one in which the patient does not have the faintest notion that he has been interviewed. Instead, after it is over, he believes he has had a friendly chat with a remarkably fine person who seems to have unusually sympathetic understanding. The patient does not feel that he has been pumped dry by some inquisitive busybody, but feels relieved because he has been able to talk freely with one who is interested in his problems. (Rogers, 93)

No matter how objective an interviewer may be, he is still likely to read his own views and interpretations into what the patient says and does. If we could have half a dozen persons interview the same patient, it might be that the errors of each interviewer could be balanced against the others, and the end result would be fairly reliable. Such a procedure would be tedious and costly. Rating methods have been used to accomplish this purpose with some success. Large numbers of judges can be used but, instead of each one basing his judgment upon extensive interviews with the patient, he is guided solely by his contacts with the rated person; too often these are rather casual. Since those who deal with abnormal individuals need to go deeper than any such casual evaluation of a person, rating scales have not been used very extensively in the field of psychopathology.

Instead, the usual procedure is for a social worker to interview several informants (persons who are close relatives or intimate associates of the patient) and to combine the results of these interviews in a composite picture. This is used in

connection with the psychiatrist's interpretation of the patient's difficulties and with the psychologist's tests of and interviews with the patient. All these materials are organized into a case record. On the basis of such a complete case history, a subjective evaluation of the whole personality of the patient can be made with some accuracy. (Dollard, 31)

71. **Clinical methods.** The final result of such a system of perfecting subjective interpretations depends upon the skill of the various individuals who take part and particularly upon the one who makes the final synthesis. In spite of all the care that may be taken to make such a study objective, there remains a large element of uncertainty. Varying with the skills of all who contribute, a diagnosis based on a case history may range all the way from a sheer guess to a very clever interpretation which really scores a bull's eye. The real trouble is that, at the time the diagnosis is made, no one can tell whether the diagnostician has scored a hit or not; the final test comes only from later developments in the patient's case.

The clinician is one who has made an art of interpreting case histories. "His sympathetic understanding of the subject, his experience with previous cases, his seemingly intuitional selection of certain points and the neglect of others result in a diagnosis, frequently brilliantly accurate, but decidedly subjective." (Baldwin, 10) A wooden appraisal of case materials is certainly not to be preferred to the artistic interpretation of an expert clinician even though we may grant that such artistry is subject to error.

In spite of the difficulties arising from subjective values, which occur in making personal judgments of others, the clinician has an advantage over those who desire to evaluate personality for the purpose of selecting employees, or for some other similar, practical, everyday purpose. The patient has been in critical situations that involved conflicts within himself and with outside forces. It is well known that a person reveals his true nature best in critical situations. (Freeman, 35) A case history, especially the case history of a mentally ill person, deals extensively with such crises and hence is more likely to give an adequate picture than the subjective attempts to evaluate a person who never gets out of a humdrum groove in his living.

The clinical approach to the study of personality really grew from necessity and not because any person devised it as a unique tool. In the clinical situation the patient wants help, and the physician's job is to give it. What more natural than to use the material thus provided by the patient to understand his personality, especially when it is recognized that treatment of mental disorders necessitates such insight on the part of the physician and often of the patient?

The great advantage of the clinical method is that it enables one to study a person's behavior in its proper perspective. At the same time, it provides a more or less intimate type of situation which encourages the patient to tell ideas, attitudes, and activities that he might otherwise keep to himself or even distort in a test or in a more formal type of interview. The greatest disadvantage is that the personality of a patient offers a bewildering complexity of elements that may be more confusing than helpful to anyone except a person with a wide experience among a great variety of persons. Hence, the clinical method is necessarily restricted to well-trained professional persons and is likely to lead to great errors when attempted by a novice. The young person needs to obtain extended tutelage under an experienced person before launching independently into the use of this method.

Probably the greatest contribution to this method has been made by the psychoanalysts. Contrary to popular opinion to the effect that psychoanalysis is primarily a body of theories, its most important contribution has been the development of a clinical technique, some modification of which is used in practically all psychiatric clinical situations even though the clinician may not be aware of the origin of the methods he is employing. The core of psychoanalytic procedure is the encouragement of the patient to talk freely about himself, to tell all his hidden impulses and thoughts, and to rid himself of his emotional tensions. What clinician does not use such methods?

The clinical method for studying individuals utilizes not just one set of techniques but any and all methods that will enrich the perspective of the clinician; he should never permit his interest in one tool to dim that perspective or to warp his judgment. The purpose of diagnosing a patient is to arrive

at a program for treating him, that is, for changing him. Adequate diagnosis and wise treatment should lead to a changed diagnosis after such treatment.

This section has had to do with subjective methods for studying personality, and we have seen that they are very important and necessary. Emphasis upon the importance of artistry in diagnosis should, on the other hand, never interfere with or discourage the clinician from utilizing information gained from more formal examination methods. The psychological laboratory has provided rich materials for the clinician to use to increase his personal skill.

72. Personality tests. The logical method for eliminating or at least minimizing the errors resulting from subjective evaluations of personality would seem to be the development of objective tests. Much effort has certainly been expended in this direction, for, in the last two decades, over a thousand publications have appeared in the field of personality measurements. Such tests have been most successful in the study of groups of individuals or in judging trends. They have not been so reliable when applied to the study of single individuals. Furthermore, success seems to have been achieved more in the areas of education, vocational guidance, social problems, and in the analysis of reasons for variability between groups than in those more intimate aspects of personality that concern the clinician. The inner attitudes of a person, his unresolved conflicts, his antipathies to certain social standards, and his personal disorganization are all factors that have not yet been responsive to measurement by objective tests.

This does not mean that test results do not help in clinical diagnosis, but it should warn the reader against the temptation to put faith in implicit dependence on one or a few personality scales. (Greene, 40)

Since personality is the resultant of dynamic forces in continual action, no battery of tests can be depended upon to give a total picture of an individual. Personality tests are merely devices to enable the investigator to get at more facets of the living being he is studying than could be done by a number of interviewers or investigators in a comparable length of time. Used alone, such tests may lead to gross error; used in combination with case histories, they are very

valuable. Novices are inclined to give them too much weight; it takes experience to learn to use personality tests judiciously. Clinical experience provides the best preparation for their correct interpretation.

Not all personality tests have the same value for the student of abnormal individuals. It is important to know something of the personal stability of the individual, the ideology that guides him, the degree of integration he possesses, the customary way he adjusts to stresses and conflicts, as well as the degree of insight he possesses. Can such aspects of personality be reduced to test scores? Those who would answer this question in the affirmative have devoted their attention to the production of tests; those who are inclined to a negative answer have fostered clinical approaches or some modification of them that favors giving the subject freedom to act freely with the burden of interpretation falling on the examiner. These compromise methods have been called *projective methods* and will be discussed shortly.

Adjustment testers may be separated into two groups: those who observe representative samples of the patient's behavior, and those who require the patient to reply to questions concerning his attitudes and behavior. A simple illustration will make clear the distinction between these two approaches. In order to measure a person's persistence he may be assigned a series of tasks of increasing complexity and his reaction to these tasks noted in terms of the length of time he sticks to his work and the manner in which he works. (Morgan and Lannert, 80) The verbal reaction approach would obtain the subject's answers to such questions as: "Do you tire easily of doing routine work?" "Do you usually stick to a task that grows increasingly more difficult?" "Does some interference in the performance of a task increase your desire to finish it?"

For some reason, probably because they are easier to give and to score, the verbal type of personality inventory has received more attention than performance tests of personal adjustment. Most of these follow more or less faithfully the method devised by Woodworth in his Personal Data Sheet first published in 1917. By combing the case histories of a number of neurotic patients, he accumulated a list of two hundred neurotic symptoms. These were put in the form of

direct questions that could be answered by the individual to be tested. The score was simply the number of questions answered in the affirmative. (Woodworth, 126)

The success of such a test depends to some extent upon the degree of ignorance of the subject as to the significance of the questions and the degree of straightforwardness he exercises in answering them. The informed person can shift his scores in any direction he desires. (Kelley & Miles, 64) The variety of such tests is too large for discussion here. Gross errors may be made unless the tests are given by those who are well informed in the whole field of personality testing. (Greene, 40)

73. **The search for general factors in personality.** A frequently voiced opinion is that personality is based on relatively few factors and that the variations which appear result from combinations of these. "If we make the very conservative estimate that personality can be described in terms of ten traits and that we can measure each of these traits on a ten-point scale, we have ten billion separate personalities allowed for. If we assume that twenty traits are involved with no increase in the assumed fineness of measurement, we have room for over one hundred trillion distinct descriptions." (Wolfe, 125, p. 396)

If this hypothesis is true, namely, that the complexity of human personality is based on the way in which relatively few basic factors are combined, research should logically be directed toward digging out these cardinal factors. Could they all be located and measured, the measurement of personality could be reduced to the simple process of determining the amount of each factor possessed by the subject under study and of describing the kinds of relationship existing between them. This is the avowed purpose of the "factor analysts," although they say that they are still a long way from their goal.

The procedure is essentially as follows: A number of subjects are given test items designed to cover the whole range of personality under investigation. Each item in this test battery is then correlated with every other item and, by studying the intercorrelations between items, clusters are isolated. Each such cluster is presumed to be held together by some

common factor. Usually several such clusters are found when any particular aspect of personality is studied. Variations in the manifestation of this aspect are then conceived as due to different proportions and arrangements of these basic factors. (Thurstone, 118)

Clearly, the methods of the clinician and those of the factor analyst can usefully supplement each other. The clinician is on the lookout for unique aspects, the factor analyst hunts for an explanation as to how these unique characteristics may be related by means of common underlying factors.

Also, factor analysis is, really, a study of the factors found in the tests themselves and need not represent factors as they actually exist in individuals. Since each study uses a different combination of test items, different investigations naturally end up with different sets of factors for what may be called the same general personality area.

74. Projective techniques. Both the clinician and the tester have the common objective of learning more about the person being examined, but their methods take them in opposite directions. The clinician attempts to give the patient more and more liberty to express himself freely, and he takes on himself the task of interpreting these free expressions. The tester, on the other hand, attempts to get more and more accurate and objective measurements of what the patient says and does, so as to eliminate any need for interpretation but at the expense of freedom of expression on the part of the patient. Each new advance in the accuracy of measurements seems to be accompanied by a corresponding restriction of the patient; each added freedom for the patient is at the cost of objectivity and accuracy of measurement. Projective techniques are methods that have been developed for the purpose of healing this breach. The general idea behind these methods is to confront the subject with a relatively "unstructured," or ambiguous, situation and then ask him to do something about it. What he does may be partially determined by the situation presented to him—ambiguous though it is—but the major part of his response will be his own. Another essential aspect of these methods is that the subject be left quite in the dark as to how the experimenter intends to judge his reactions, if at all. (White, 123)

Projective techniques are an outgrowth of emphasis upon the importance of the invisible aspects of personality; they are attempts to dig these out by indirect methods. These hidden elements, it is believed, have undergone different degrees of distortion and can appear only after different amounts of resistance on the part of the patient are overcome. On the most superficial level are those things that a person knows about himself that he will not tell; if given a test or questionnaire designed to probe his innermost being, he will distort his actions and reply with the deliberate intention of deceiving his inquisitor. Then there are other aspects that are so vague that he does not notice them and that may escape detection by an observer. Still more obscure are those aspects of his personality that he has repressed and forgotten because their recognition would cause him intense anxiety. There are projection techniques for probing each of these levels of personality, but obviously, the success of each method is partly due to the degree to which its real purpose is concealed from the subject.

The most important of these techniques are word associations, the interpretation of dreams, the imaginations of the subject in response to the presentation of ink blots (the Rorschach Test), free storytelling or writing, telling a story about a picture (Thematic Apperception Test), free play, drawing and painting, modeling, and reactions in a social situation.

Projective techniques are a refinement of the free association method introduced by the psychoanalysts. The principle behind these methods is certainly sound: Give an individual freedom to act as he wishes and he will express his dominant tendencies or habit patterns. If we can interpret these reactions, we certainly will know more about his real nature than we could ever learn by attempting to evaluate a response he made under restrictions imposed by experimenter or tester. (Sargent, 97)

XVIII. INDIVIDUAL DEVELOPMENT OF PERSONALITY

Personality is never static. Those qualities we observe at one moment in a person are the products of the experiences he has had, and what we shall see in the future will be the resultant of what he now is as

modified by what happens to him. It may be interesting to compare individuals in order to select those traits that seem common to all, to classify those traits in which classes of persons differ, and to make other such comparisons; but frequently the deepest insights come from following separate individuals as they progress through their lives.

75. **Personalities are infinite in variety.** A metal may be reduced to its basic form so that any two pieces of it are practically the same in structure. Personality cannot be reduced to any such elementary factors; it is probably incorrect even to conceive of personality as structured. It is more like a motion picture. One may examine one frame of a movie film but such a procedure deprives the movie of its essential characteristic—change. In like manner we may make a momentary examination of a person by the study of a single instant in his life; such a glimpse may teach us something about him, but it should not tempt us to ignore the fact that the next moment will be different from the one we are examining. We are overemphasizing this point because it is so often neglected, but we do not mean to imply that one's personality has no consistency. To carry the motion-picture analogy further, there is presumably some sort of plot or theme in a normal personality.

In addition, any given experience will be quite different to different children. Discipline which has no effect on one child, not even corrective, will keep another child awake at night. Some children react to frustration by fighting back, while some submit to frustration passively. Conversely, if one observes the same sort of behavior, it is not legitimate to assume that it sprang from the same set of causes. For example, one child may be aggressive only when blocked or frustrated or interfered with, another may be aggressive when he is afraid, while still another may be aggressive as a way of enhancing his sense of bigness. (Murphy, 83, p. 665)

Only for purposes of convenience do we describe personalities as though they were static, whether such description be to type or to give a dynamic picture. The fact that our personalities are never exactly the same from one day to the next, however, does not keep most of us from being more like ourselves most of the time than like someone else. We change, but usually within some frame of reference.

76. **Early development of personality.** We are not sure just where or when personality begins its development in a given individual. We are rather certain, however, that by the end of the second year of life certain directions and trends have been set up. Obviously, the home environment and training are most important in establishing these patterns. Just how this comes about is the concern of Child and Adolescent Psychology, but its importance for later development cannot be overemphasized. In a sense, the child *is* father to the man. What he experiences in childhood will help to set the framework within which he operates in adulthood. This is not to say that home or school factors *cause* certain personality patterns, certainly not in a predictable way. The growing personality is too dynamic and in too constant interaction with other factors in the environment for that.

77. **Individualism versus socialization.** In the growing personality there is sure to be a struggle between the forces that would keep a man individualistic and those that would socialize him. The end results of this contest may be seen in the differences in adults in this respect. Some persons fear their environment, shrinking away from contact with people, while others enjoy and seek contact with their fellows. Some are emotionally sensitive to external happenings and others are socially obtuse. Some tend to retain their infantile dependence, while others show a high degree of personal initiative. Some are submissive to the dictates of their associates, while others become extremely aggressive under regimentation. Some are acquisitive, while others are generous. Some have a narrow circle of friends and others spread their acquaintances with apparent ease. Some devote their lives to taking all they can get from their neighbors and associates, while others are more concerned with giving. Clearly, these and many more factors are involved in a development that is frequently glibly referred to as though it were a simple process. There are hundreds of ways of being sociable or individualistic.

78. **Freedom versus dependence.** One aspect of this battle between individualism and socialization is the struggle of the individual for independence and freedom from forces that would keep him in a condition of infantile dependence. If

a child has parents and teachers who understand his needs, and who have no overweening desire to retain domination over him, he will be helped only so long as he actually needs help. Such adults will see to it that he is given freedom to cope with increasingly difficult problems and that he learns to solve them in his own way and on his own power. A child so trained will tend to become engrossed in solving problems, in doing things, and will have a minimum of self-consciousness as to whether he is doing the acts independently or whether he is under the critical eye of his overseers. If, on the other hand, his parents derive an unwarranted thrill from helping the child or from bossing him, the child will be made aware of the domination-submission factor and may react in either of two ways. He may learn to continue his dependence (being dominated either by pleasure derived from being dependent or by the fear of being punished), or he may react against restraint and become aggressively determined to break loose from parental domination and control. Most psychologists would agree that the most wholesome type of person is the one who, having been raised by parents who were not themselves obsessed with the issue of who should be boss, had learned to be more interested in solving problems than in happy submission or in anxious rebellion against real or fancied oppression. The only way in which a child can become self-reliant is by aggressively opposing those who, for one reason or another, would deprive him of his freedom. If he is aggressive enough he may overpower the tyrants (be they parental or political tyrants) who are over him, only to become a worse tyrant himself. No more oppressive dictator exists than the "leader" who has risen from the thwarting and the domination of others.

The factor that makes this conflict inevitable is that no person is self-sufficient. The parent is able to institute his tyranny over his child because the child is helpless and needs the ministration of adults in order to live. But it should be recognized that giving aid to one who is powerless to get along without that help is the essential foundation of tyranny. Tyranny resides in the personal urges of the tyrant, and the needs of others merely give personal urges an opportunity to thrive. The tyrannical parent is the one who takes ad-

vantage of the helplessness of his child to secure an outlet for his own personal need for freedom from domination.

79. **The role of habit in adjustment.** There are times when it pays a person to be consistent in his behavior, and there are times when it pays to be inconsistent. A motor habit is the simplest form of consistency. A man walks on two legs, and only for some special purpose does he change his customary manner of walking and take a turn on his hands, on all fours, or on his belly. In the realm of most motor acts, man prospers by permitting himself to be governed by habit and is not disturbed when someone points out to him that he is a slave to his own consistency. However, although the walking itself may be habitual, the way in which he does so may disclose something about his personality. One man may strut and thus reveal that he has an elevated opinion of himself. Another may shuffle and thus manifest a tendency to lack vigor in his actions. Such personality disclosures are not very trustworthy; they are merely mentioned to indicate that individuals vary even in such simple acts as walking. Consistency also develops with age. The child who is just learning to walk shows no personality characteristics by his manner of walking. He totters around, reverts to crawling or scooting, rolls over, and the like.

In the area of simple motor performances, it is in the interest of efficiency to become a slave to habit. What would a man gain by remaining versatile in his means of locomotion? He might reserve to himself the privilege of progressing by various methods, crawling one day, walking on his hands the next, hopping, skipping, and the like. He could, conceivably, demonstrate his independence, his versatility, and his continuing youth by refusing to submit to habit. Such a procedure would gain him nothing—it would merely consume all his energies and he would have none left for more worthy activities.

The great proportion of personality traits, character patterns, and mental attitudes may be regarded as habits—a viewpoint that has proved most fruitful in understanding human behavior. This point of view does not deny the fact that some inborn factors contribute to these features of a personality any more than the assertion that walking is a habit

denies that legs, which have a distinctive structure, are important for walking; but the mere description of a pair of legs does not explain walking.

The ways in which these traits are begun were described in the preceding chapter. They really have their foundation in the ways in which the environment, physical and social, resists or yields to the activities of the person. Personality breadth is fostered by a wide range of experiences—perhaps even with little consistency—in infancy, childhood, and youth; the individual learns that one type of activity will not always bring the same results because the patterns of obstacles and successes change with each experience. A person reared in such an environment learns that, while some general repetitions are in order, the real test of success is the ability to discern the finer shades of difference in the succeeding experiences while recognizing the constant or repetitive factors. For example, an only child who is prevented from associations with anyone else by a selfish mother learns only how to deal with this one person—his mother. On the other hand, a child in a large family, in close association with many other neighboring families, must learn how to deal with a great many different persons. This does not mean that such a child may not get into a rut in spite of these opportunities for versatility of adjustment; he may, but he has more chances not to.

80. Traits and intelligence. In describing personality many psychologists have used the concept of traits. Traits are consistent ways of making adjustments; their use helps in describing the personalities of different people in similar terms. We may say, for example, that A possesses the trait of sociability to a high degree whereas B possesses it only to a slight degree. When we use the notion of traits we are obviously getting a sort of bird's-eye view of the person with respect only to certain characteristics; we overgeneralize his ways of reacting. At least this should be true since it is not intelligent to react in a perfectly consistent manner to all situations. As the situation changes, so should our ways of behaving.

Getting into a rut through the exclusive use of already perfected habits, traits, mental attitudes, or character patterns

is often a non-intelligent way of behaving. Such uniformities of behavior may have originated in very intelligent adjustments to problem situations. But if we continue to use them in the present just because they were successful in the past and without reference to present conditions, it may mean that we are acting according to some form of inner compulsion rather than making an intelligent attack on the current situation. Purely habitual behavior tends to ignore the new features of a situation and responds to the easily recognized ones. Such behavior is often effective and brings success, provided the situations in which a person finds himself do not call for any originality of response. In such cases man's intelligence has not been strongly challenged; one of the marks of intelligence is the ability to make new and original adjustments when they are called for. (Stoddard, 105a) Routine habit is so often successful merely because there are uniformities in our environments and because ordinary living requires the use of little higher-order intelligence. We see intelligence being forcefully used when failure threatens and when customary patterns of activity are no longer effective.

The wholesome personality, then, is not to be measured by the degree of its intelligence. Intelligent behavior is the best type of emergency behavior but only a small portion of an ordinary life is taken up with emergencies. The wholesome man, on the contrary, is the one who has developed habits, traits, and attitudes which for the most part bring him success in the world of physical adjustments, in his professional work, in his social activities, and in his moral behavior. The best-fortified person is the one who has a host of these patterns of reacting and has learned to sense the cues that tell him which one or which combination to use. Unfortunate is the man who has one idea, one habit, one attitude, one code of living (no matter how good it may be in and of itself) and who uses that one on all occasions.

For example, suppose a child has learned that the way to get something from his mother is to show affection for her. If he learns nothing else than this one trait he soon finds that he does not get along very well. The other little boys do not respond to his love and if the little girls do so their mothers object. Such failures should teach him a lesson; but

suppose they do not. The older he gets the more difficulty he would have. The difficulty is not with the habit of loving others, but with his turning it on whenever he is prompted by some inner need, instead of taking his cue from the social situation he confronts at the moment.

81. Varied reactions to personal equipment. The student of individual differences would not be content with an explanation based solely upon differences in personal equipment. These are important but still more important is the variety of ways in which the child may react to the equipment he possesses. An examination of the varied effects of such factors as intelligence, health, physical appearance, and material possessions should make this point clear.

1. *Mental ability.* A dull child may develop very placidly in an environment where not too much is expected of him. He responds in a manner characteristic of his limited ability, probably recognizes the fact, before he is very old, that others are cleverer than he is, but takes that as a matter of course and may mature into a very docile individual. The same person, confronted by situations too difficult for his limited intelligence, may get into various predicaments. Having done something at the suggestion of a more intelligent person, he may be amazed to find himself being punished for what was to him an innocent performance. He may, as a result, develop anything but a tractable disposition. He may cultivate cunning to help him over his difficulties; he may be filled with a feeling of his own incompetence and may fight against it; or he may assume an attitude of hate toward those who cause him so much discomfort.

At the other extreme, a bright child may find life too tame and commonplace for him. He may come to depend upon his cleverness to avoid the more monotonous duties of life, become extremely arrogant because of his feeling of superiority, and develop into a malevolent person with whom no one would care to live. A personality study involves not only a knowledge of the degree of intelligence, but an understanding of the secondary attitudes built around this factor. It is not enough for a teacher to know a child's intelligence quotient: his emotional reactions and the use he makes of his intelligence should also be considered.

2. *Health.* The most important personality modification that may result from an illness is not the direct effect of such sickness upon the nervous system, but the indirect effect upon the rest of the personality. In illness one is treated with great solicitude, which is enjoyed despite the attendant suffering. Any mother can testify to the fact that the disposition of her child is quite different after a serious illness. She will state that she has to "train him all over again." In this retraining process she may be only relatively successful. In any case, the disposition is radically changed because of illness. In many instances complicating circumstances enter in to make the effect of illness even more serious. If a child fancies himself mistreated during his illness, hatred or cruelty may ensue. Specific phobias for doctors, nurses, ether, or disease may develop. If an individual's illness enables him to escape something more undesirable, such as warfare, he may become sick upon the slightest provocation. Such a development is, in fact, rather common. If a quiz is announced in a classroom there is a probability that a greater number of students than are customarily absent will be absent from the quiz. Many of these give the excuse that they were ill.

In addition to the specific effects of an illness upon an individual, his attitude toward life may be strikingly altered by his physical condition. A sound philosophy of life is more likely to develop in a healthy body than in a diseased one. In studying the effects of illness we should attempt to determine as far as possible how the outlook was modified by illness. Some persons are no doubt helped by illness, while others are pushed farther toward disintegration.

3. *Physical appearance.* Unfortunately, adults are sure to impress upon a child, in his most formative years, their attitude toward his physical appearance. Many a girl has been made egocentric because a doting mother or relative has remarked upon the child's beauty in her presence. Children's attitudes have been distorted by hearing personal remarks made about them by parents, relatives, or neighbors. "Isn't he just the image of his mother? He must be mother's boy." "He is a chip off the old block. He has all his father's tricks." We may think that impressions from such remarks are not lasting, but much evidence has come to light to indicate that

they are. The following concrete instances are typical: Many queer reactions in one woman could be traced to the fact that when she was a little girl someone remarked in her presence that she had sensuous lips. One man's distorted attitude toward women could be traced to the remark of a dressmaker, who chanced to be working in his home when he was about six years old, that, with his eyes, he certainly would be a heartbreaker.

Sensitivity to peculiarities of appearance is aggravated by the tendency of other children to select outstanding differences and to hold them up for ridicule. As is well known, many nicknames are based on this performance; such as "Red," "Fatty," "Skinny," "Mugs," and "Freckles." In the study of physical peculiarities, emphasis should be placed on their influence upon the personality as a whole.

4. *Material possessions.* The values that a child places upon material possessions are in most instances the direct result of the attitude of his parents or guardians toward material things. These soon become accentuated by comparison with the possessions of other children. A child will naturally be satisfied with few toys until he finds that his parents bemoan the fact that he has no more, or that other children have more to boast about than he has. Most parents are familiar with the experience of buying expensive toys for their children only to find that they prefer some very ordinary plaything.

Once impressed with the fact that he has little, the child may exhibit various reactions. He may set about acquiring things in the easiest manner—stealing them. He may wreak vengeance upon the more fortunate by breaking their toys. He may shun companionship because of a self-deprecatory attitude. He may imagine that he has countless possessions and live in a world of phantasy. He may relate the contents of such phantasies as if they were real and, in the eyes of his elders, be a liar. Or, he may develop an ambition to become a great man so that he will have the means to acquire all that he wants. Many of the foibles of grown men are the result of attitudes developed by their being deprived of coveted objects as children, or rather, by their feeling that they were deprived.

It is very easy for a child to overvalue material possessions and their importance. The author had occasion to meet a student who was very much depressed because she had no friends. She attributed this want to the fact that she did not have the clothing, a car, and the money that she believed essential to bring friends to her. She called all the girls "snobs," when as a matter of fact she was much more snobbish than they were. She had tried to "hold her head up" in spite of her material handicaps and held it so high that all the other girls avoided her. It was easily demonstrated to her that her lack of friends was not the result of her meager material possessions but of her attitude. When she changed her attitude she won friends very easily.

82. Effect of family relationships on personality development. As important as any determiners of personality traits are the home relationships in which the child finds himself—the personal interactions of the different members of the home group. What may, on the surface, and to outsiders, appear to be a perfectly adjusted and happy household, may to some particular one of its members be a place of torment. A home that appears to the outsider as a veritable nest of evil may be the means of producing a strong character in the child reared in it. An adequate understanding of any person's individuality cannot be obtained without some knowledge of his family background, and the attitudes developing from it.

The most significant influences are often the subtle ones that neither the parent nor the child recognizes.

"The adult unconsciously exerts a decisive influence on the wishes of the child without the child having the slightest comprehension of the existence of the influence . . . He unconsciously cultivates in the child attitudes that please his own wishes and tends to repress in the child the spontaneous interests that irritate the affections which the adult has repressed." (Kempf, 65, p. 86)

The temptation of the student in this field is to oversimplify these relationships—to search for a specific family situation that will explain any peculiarity in a person. The interrelationships are so many and so far-reaching that no such simple formula can be found. The child's personality

is not characteristically the result of the influence of father, mother, brother, sister, aunt, uncle, nurse, or others who happen to come into his life, but is dependent upon an intricate combination of all these influences working together. A child may derive one attitude from one family influence, another attitude from another source. Furthermore, as we have stressed, personality is never static, and so one attitude is constantly changing into a succeeding one. In studying the influence of different family situations we shall necessarily be forced to study different influences separately, but we cannot emphasize too strongly the fact that these influences are always operative in differing combinations and with different degrees of force.

In order to illustrate how different home situations can develop different tendencies in the same person, let us trace a few of these factors in the case of a normal girl, whom we shall call Pearl. Pearl's father was forty-five years old when he married her mother, who was twenty. Four girls were born, of whom Pearl was the youngest. When Pearl was six years old, her father developed a marked tremor that made him unable to write, to hold a paper or a book, or even to eat without much difficulty. His daughters' main delight was to write letters for him and to wait upon him in general. Their attitude toward him was one of pity rather than the filial dependence or respect induced by an ordinary father's physical stamina. The mother, being so much younger than the father, was accepted as one of the younger group. Consequently, Pearl developed an attitude of self-dependence, which was a factor in her leaving home and working her way through college. The father's marriage had been bitterly opposed by his family, particularly by his sister Mary who, it seems, had an abnormal attachment for her brother. Not succeeding in keeping her brother from marrying, she proceeded to do her best to disrupt the life of this new family. After a few years, out of spite, she married a man she did not love and who spent most of his time away from home, leaving Aunt Mary free to pester her brother's family. When Pearl was a tiny girl, Aunt Mary would look at her, sigh, and shake her head with the remark, "You poor child, you are an old man's daughter." If Pearl was restless, Aunt Mary

would tell her to keep quiet, that she was becoming just like her father. Aunt Mary cared for her from the age of ten to sixteen under the pretense of helping her. During these six years she did her best to convince Pearl that she was an invalid, insisting that she was "organically weak." Aunt Mary was herself a hypochondriac whose main enjoyment was taking drugs. She traveled with Pearl from one resort to another drinking health waters, hunting up new drugs, and feeding calomel to herself and to Pearl at regular intervals. This calomel-taking became almost a ceremonial with her. Pearl's reaction to all this was to escape from all that her aunt ever suggested to her. At the present time she will never take medicine of any sort and has spent untold energy proving to herself that she is troubled with none of the diseases that her aunt said that she had. Having been told that she had pulmonary tuberculosis, Pearl worked until she had the greatest chest expansion of any one in her college class. In their travels throughout the country the two had to sleep together and the aunt always made Pearl's life miserable by insisting that she keep perfectly still throughout the night. She would make her retire first and command her to get perfectly quiet before she herself came to bed. She impressed upon her the fact that all activity was a sign of nervousness, and that, in order to keep from becoming like her father, she must be perfectly quiet. This is the one characteristic for which Pearl has been unable to compensate. Even now, when excited, she becomes very tremulous and has to fight the fear that she is nervous. Besides, the aunt kept up a regular series of admonitions concerning decorum and keeping up the family standards. This peculiar combination of restraints tended to make Pearl strive for freedom of all sorts. She takes delight in doing things that would, in Aunt Mary's mind, lower the family standard. She is a firm disbeliever in heredity, the reason being obvious in her background. She is a hard worker; her goal is independence— independence from the restraints of her aunt. Feeling pity rather than respect for her father she has a poor background upon which to build a normal attitude toward men. Certainly, this brief sketch is enough to show that Pearl could not be understood without some knowledge of the personal contacts that shaped

her early life. We must note also that an important fact to consider is how she reacted to those about her. We have but one side of the story until we know her adjustment to each of these influences.

Since family relationships are of such vital importance in personality development, it may be profitable to examine in some detail the specific effect of some of their most striking forms.

1. *Dominance of one person.* The fact that each of our lives is influenced by a number of individuals is one of the most beneficial features of environmental modification. This permits any outstanding idiosyncrasy of one person, which might have an undue influence upon us, to be softened by the influence of other persons, who may counteract it, and at the same time add other influences of a different sort. There are, nevertheless, some instances where a particular individual exercises a dominant influence. Such situations are always fraught with danger.

(a) *Small Family Group.* An outstanding illustration of the possibilities in one dominant influence is the family in which there is an only child. An only child is the center of attention whether there is only one adult in the family or whether there are more, and so he is likely to become unduly influenced by the particular individuals who train him. "Spoiling" of this sort is aggravated when it is accomplished by one member of the adult group.

(b) *Extreme Adult Interest.* Various situations may lead to the development of undue interest in the child on the part of an elder. If a mother has lost her husband, she naturally looks to her child for comfort and showers her affections upon him. Marital incompatibility of one sort or another usually brings the child to the focus of attention more than he otherwise would be. Other members of the family—grandmothers, aunts, grandfathers, uncles, or other relations—having unsatisfactory lives of their own, may take it upon themselves to "do the best for the child." Usually this means the "best for the adult." They do service and homage to the child not for "his good" but for their own and then they rationalize their conduct by thinking they are doing him a service. When analyzed, most of the interest that adults have

in children is selfish in nature and is not a reasoned program calculated to be of benefit to the growing personality.

Few of us have failed to see specific instances of a mother who has transferred her affection from her husband to her son. In such cases it is very easy for the mother to urge her son not to marry, saying: "What shall I do if you marry?" This undue affection in a lesser form often accounts for a mother's feeling that no girl is good enough for her son. Rivals are always unworthy.

(c) *Emotional Crises*. If, in the event of some bereavement or other crisis, a particular individual brings relief, the child naturally looks to this person with extreme interest and devotion. Usually other events will divert interest from such an influential person, but sometimes this does not occur. If the one providing such influence happens to derive enjoyment from this devotion he is likely to endeavor to continue it. We are not intimating that such a condition is necessarily detrimental but, if carried to extreme, provides a narrowing influence on the child's personality. No one person, no matter how valuable his influence, can provide stimulation of sufficient breadth and variety to develop the best type of personality.

2. *Unfortunate family groups*. The combination of personalities is different in each family situation and each must be studied separately. We can, however, mention a few outstanding family groups that will illustrate the principles involved in family influence.

(a) *Where the Child Is a Bond between Mismatched Parents*. In such a family the child is usually torn between two conflicting attitudes. One parent may hate the child because he is an obstacle to dissolving an undesirable partnership; the other may look to him for comfort. This leads to an unnaturally strong positive affective reaction to one parent and a strong negative affective reaction toward the other. The child feels this strained relationship and is likely to be lonely and to consider himself neglected despite the particular attention he gets from one parent. As he grows to maturity, he is likely to feel inferior and dissatisfied with life in general. We had one subject, a woman of thirty-five, who had a profound depression that was traced to such a home

condition. When a tiny girl she felt that she, for some reason she could not understand, stood between her parents and as a result wished that she were dead so that they could be reconciled. She felt that her father liked her but that her mother hated her for any attentions that she received from her father. Because they themselves cannot express the nature of the difficulty, we often fail to realize how seriously children take such things. Few attitudes have so pernicious an influence on a growing personality as the feeling of being unwanted.

(b) *Divorced Parents.* While separation of the parents may relieve the situation described above, it brings other conditions that have a different but just as serious effect. If the child is given to the parent who loves him, he is likely to receive undue affection. He takes the place of the departed spouse in the affective life of the guardian and is consequently "spoiled." The indirect consequences of such a situation are very far-reaching.

If the child happens to be given to the parent who does not love him, the situation is even worse. We found one boy who was failing in his second year of college work in spite of the fact that he had superior intelligence. His parents were divorced when he was three years of age and the court gave the boy to the mother with the stipulation that the father could have him one day a week. The mother spent six days endeavoring to make him hate his father and the father spent the seventh lavishing affection upon him and buying him gifts. The boy, being deprived for the most part of the comradeship of the one he loved and being forced to stay with the one who did not love him, developed a strong cynicism that went so far that he stated his only delight consisted in making others suffer. He had deliberately courted six different girls in his short college career, and after they had become somewhat attached to him he had deliberately "jilted" them in order to see them "suffer."

(c) *Parent Jealous of Child.* Where the bond of affection between husband and wife is none too strong one parent or the other may become jealous of the attentions that the child receives at the hands of the other. Since the mother is usually the one who gives the infant the most attention, it is more

often the father who is jealous. We have encountered cases where the reverse held true. One child was reported because she was failing in school, and the trouble was traced to a very serious family situation. The father was twenty years older than the mother and preferred reading at home to any of the pleasures that the younger wife would have enjoyed. He had been a staid old bachelor before he met his future wife but during the period of courtship had learned to dance, had accompanied her to the theater, and had seemed to be interested in social affairs. As soon as they were married he settled down to the comforts of home and would accompany her nowhere. When their girl was born he immediately devoted a great amount of attention to her and the wife consequently became extremely jealous. His response to this jealousy was to devote even more attention to the daughter, showering gifts upon her without measure and, by solving all her difficulties, thus killed all incentive in her. The child appreciated this conflict between the parents and played one against the other to get what she wanted. This substitution of trickery for industry was a big factor in her failure in school.

(d) *The Parents Who Magnify Their Illnesses.* A woman may magnify her ill health either to win attention to herself or to bring out the gentler traits in an otherwise coarse husband. This has a varying effect depending upon whether the child concerned is a boy or a girl. In either case the child is likely to sympathize with the mother and to hate the father if he does not accede to every wish of the sickly mother. A girl may pattern after her mother and learn the same tricks or she may resent the fact that her mother has to suffer so much and take the initiative in providing for her. She thus develops a masculine protective outlook upon life and hates the coarse type of man that her father appears to be. A boy will also usually take his mother's side in such a situation and become his mother's hero, taking the place of the father in his mother's affection. An analogous situation maintains when it is the father who craves attention and becomes ill in order to secure it.

(e) *The Devouring Parent.* An egocentric parent sees the world only in terms of selfish desires and ambitions. To such

a parent a child simply spells an opportunity to work out in him a career in which the parent will delight. The child is forced into the preconceived mold of the parent with no thought for what might be best for the child. A mother of this type will follow son and daughter and cling to them even after they are married and will want to mother the grandchildren as well, thus providing the typical mother-in-law problem. A father will mold his son into a business or profession to his own liking, or will endeavor to shape the life of his son-in-law. If the father happened to get into a profession that he enjoys he will make sure that the son follows in his footsteps. If he is displeased with his choice he will select another for his son, but will, nevertheless, be just as insistent upon his following it. The child may follow such guidance or may revolt emphatically from the course laid out by the father. Such revolt may be seen in the fact that quite a number of boys, when asked what they wish to do, reply, "Anything but what my father does."

Kempf (65) has well stated the result upon the child of treatment of such an unreasoning and domineering type.

"Whenever an adult forces a child to do something or to learn something against its wishes, without justifying his demands by inducing the child to wish to act, other than as a compensation for fear, the adult, whether a sincere, devoted parent or not, dulls the child's initiative and curiosity. Repeated experiences of this sort subdue the youth's aggressiveness, and opportunity is lost to his competitor, who, although he may have less inherent capacity, wins because he is better trained."

A prime requisite for personality development is for each individual to learn to "stand on his own feet" and when a parent, for selfish reasons, encourages the child to depend upon him he is really keeping him in an infantile stage and doing him an incalculable injustice. Many persons who are chronologically adults are babies in personality because of devouring parents.

(f) *Rivalry between Siblings*. If there is only one child in the family, he is the lord of the situation and, as we have seen, is likely to become so dependent upon the attention of his parents that he expects the same sort of treatment out-

side the home. The first-born always enjoys a period of complete dominance that is rudely interrupted by the appearance of a second child. This begins a rivalry between them for the attention of the parents. Judicious handling may reduce such friction to a minimum, but in many cases it persists quite strongly. The younger, being weaker, requires the protection of the mother or father. This protectiveness the older one interprets as partisanship, which, of course, only accentuates his jealousy. The younger one plays upon this tendency of the parents to take his part, and he is likely to be the spoiled one, while the older one is the disgruntled, the neglected one, fighting for his rights. Additional children may modify such a situation but, in turn, may complicate it. In a large family the youngest child is likely to be the pampered one, getting the attention, not only of the parents, but of the older children as well. This is especially likely to happen when there is an interval of several years between the youngest child and the one next oldest.

83. Adjustments to family the pattern for later adjustments outside the home. The intricacies of family situations could be elaborated upon indefinitely and even then all situations would not be covered. Each case has to be studied individually. The importance of all this is that the child must learn to adjust to the situation he finds in his home and that this adjustment is what gives the major portion of coloring to his personality. As he enlarges his world and makes contacts on the outside, he carries into these new relationships the patterns that he has learned in the home. Any device that he has learned he tries on his associates. Fortunate is he if his tricks do not succeed with his comrades, for then he tends to drop them and acquire better reactions. If the parents keep him from such outside associations, they are merely strengthening the home pattern by eliminating the opportunity for its modification by outside influences. If the home situation is of a desirable sort, no serious results may ensue from such limitation of environment, but if it is not of the right sort the limitation may have serious results. Since it is hard to judge which is the case, the best procedure is to encourage outside contacts as early as possible, especially where the family is small.

From this discussion it may be seen that we do not have to depend upon the mechanism of biological heredity to account for the continuance of some situations in a family tree. Biological heredity may be an important factor in the continuance of bodily traits, but personality traits are primarily dependent upon social heredity. Kempf (65) has said in this connection:

"I have been able to find that the happy or unhappy experiences of a great-grandfather conditioned him so that he, in turn, unconsciously, conditioned the affections of his children, and they conditioned their children, and so on to the fourth generation."

The foregoing gives us a perspective on the genetic growth of personality. If a teacher wishes to understand a child, it is obvious that she must know something of his home background, not of the material surroundings, however, so much as the personal relationships that exist in the home. We can see from this study that we all are the result of the interaction of various influences. Some individual tendencies have been inhibited by these influences, some have been cultivated. Some of our experiences have tended to tear us apart; some have tended to make us into more unified individuals. Each person is, in a very real sense, the result of all the elements that have preceded in his particular life history. If we take a cross section of any person we can usually find some traits or attitudes that are outstanding. The predominance of these may tempt us to describe the person in terms of his idiosyncrasies. These are, of course, a part of him, but we need to exercise care lest these overshadow the balanced normal expressions and attitudes he manifests. If we are careful to study personalities only in their proper setting, we shall be less liable to the error of seeing only their outstanding peculiarities.

XIX. DIRECTION IN WHICH PERSON IS HEADED

In making a diagnosis of personality types we must first take into consideration all the available evidence and then search for some meaning underlying it all. Theoretically, the function, element, pattern, or what not, that is found should be determined by the data alone and not by the diagnostician. Practically, this is never the case and what emerges will be, in part at least, colored by the kind of scrutiny given by the observer. The same data can be interpreted in terms of the area

of conflict, of the degree of stress, or of the habit patterns of the subject; and there is something to be said for each of these interpretations, provided the student does not confuse them. At any rate, the diagnostician or therapist is interested in determining in what direction the patient is heading as he works out or fails to work out his problems.

84. Neurotic symptoms as overworked defense mechanisms. Most defense mechanisms have some value, but when a particular defense act is used on any and all occasions out of all proportion to any need for that response, it becomes a neurotic symptom. This is just another way of saying that the victim of such a tendency is guided more by his own habit patterns than by the needs of the moment. The neurotic is a specialist to such an extent that his concentration on some defense pattern gets in the way of intelligent behavior.

As an illustration, a thirty-five-year-old woman was troubled with an overdone tendency to vomit. She vomited when about to give a performance on the piano, when her husband broke his leg, when she got news that she had lost money in a business venture, when her child was caught stealing from the five-and-ten-cent store, when a neighbor girl fell and cut her head; in fact those who knew her could count upon her to vomit with the slightest change in the living routine. There was no single cause behind all these occurrences; the cause for each could be in an entirely different area of living. They could only be explained as expressions of an overworked habit, perhaps related to protecting her own feelings of worth. The habit began when she was a child in school. She was a good student but one day, when unprepared, she was called upon to recite. The teacher, who thought that she was too conceited, took this occasion to humiliate her and did such a good job that the girl experienced a terrible emotional upset and had to go home because of a sick stomach. This changed the reaction of the teacher and all the pupils from scorn to sympathy, and the failure was thus concealed. This began the pattern. On various other occasions she used the same device, sometimes knowing what she was doing. She even learned how to poke her finger down her throat to help matters along when this was necessary. Finally, the habit became so fixed that she could not control it.

To be sure, most neurotic symptoms are by no means this clear-cut in structure, but this simple illustration gives the

principle involved even in complex situations. Now some authorities place most emphasis in such cases on the original cause for the neurotic symptoms. Obviously, the dynamic factor is not the original cause but the force of habit that has become dominant. A neurotic habit is one that spills over the area where it might be of value and controls behavior in situations where it is irrelevant. Nevertheless, it does the patient some good in relieving his own tension and in protecting him from failure and the resultant feelings of worthlessness, and so he continues to use it even though he may be paying a big price for doing so. Certainly, we are not explaining behavior when we trace a pattern back to the original situation where it began and then attribute every manifestation of that behavior pattern to the original causal element. It certainly would be foolish to insist that every instance of vomiting in this woman was caused by an unsympathetic teacher. After a habit has been formed, the ferreting out of the original cause of that habit does not automatically eliminate the habit. A man may have acquired slovenly personal habits by having been raised in a slum area, but cleaning up the district does not teach him personal hygiene. To be sure, original causes and personal history are important to the psychopathologist. He uses them so that he can understand the personality development of the patient, see where he is headed, and thus have a clearer picture of the re-education that may be needed; it is only the novice who, after having made a similar search, ends up the whole matter by attempting to remove a cause that operated years ago and is no longer effective. (In some cases, reliving the original situation in play therapy or under the influence of a narcotic may dispel the tension first occasioned by the original cause, but this is not removing the cause.) (Levy, 70)

85. The search for the patient's code of living. Only when the pattern of a patient's symptoms clusters around some central code does it have much diagnostic value. Whether a patient sits for hours or runs around incessantly, whether he is genial or spits at every visitor, whether he is meticulous about his person or tears off his clothing in an indecent fashion, or whatever else he does must be interpreted in terms of what he is about, in terms of why he is doing it. It is at this

point that no mechanical contrivance, no battery of tests, or any short cut, by itself, can supplant the clinician's art. On the basis of what information he has at the moment, including test scores and other "objective data," he attempts to formulate the patient's code for living, knowing all the while that he will need to change, revise, or enlarge this interpretation as each new bit of evidence emerges from further acts or words of the patient. His diagnosis is his best guess to date; it is a tentative interpretation. His placing of the patient in any diagnostic group is merely a way of saying that this patient seems to fit into the pattern of living characteristic of that group. When the patient has progressed far in his disease, diagnosis is more likely to be correct; at least it seems easier. In the beginning stages, when the patient is shifting from one defense to the other, when his pattern of living is not fixed, diagnosis is more precarious and much more likely to need revision. Hence, difficulty of diagnosis is one sign that the patient is not too far removed from probable redirection of his trends by proper treatment.

86. Codes that go with various diagnostic groups. In view of what has just been said, it should be clear that any attempt to state what philosophy of life goes with each type of functional disorder would involve a tremendous oversimplification of the facts. Perhaps, then, one should refrain from any attempt in this direction. On the other hand, a person has to have some hook upon which to hang his concepts, and if he realizes that each statement is subject to countless variations, and if he remembers that these statements of codes are points from which to work and not goals at which to rest, they may have some value. The reader should also be warned that these codes are not mutually exclusive; instead, they overlap considerably.

In this text we shall not make an attempt to provide concepts or types of the normal personality. This has been done elsewhere in various ways by different authors. We shall be more concerned with abnormal manifestations and tendencies and shall restrict ourselves to the classifications usually made in this area. The following pages will list various classifications from the viewpoint of the patient's essential code of living rather than of his symptom syndromes.

As we proceed with a more detailed discussion of various kinds of mental illness in later chapters, we shall find how much the following statements are oversimplified; but, at the moment, we may gain some general perspective by relating certain codes with diagnostic groupings. These formulations are not made verbally by the patient; they are merely statements of what his code probably is.

1. *Psychopathic personality*. These are ruthless egocentric persons who believe that their desire for something is the only justification needed for pursuing any means for getting it, regardless of the rights of others. Their attitude might well be expressed by saying that they believe that the world owes them a living and they have a perfect right to collect in any manner whatsoever. If they cannot gratify their desires by moral means, they do not hesitate to use immoral methods.

2. *Neurasthenia*. These people evade responsibilities and problems by excuses of physical weakness. It is as though they said, "If I were physically strong, I could accomplish wonders. As it is I am not well and will you please have pity on me because of my poor health?"

3. *Hysteria*. The code for the hysteria patient is much the same as for the neurasthenic. The latter, however, makes little effort to develop convincing symptoms of his illnesses; whereas the hysterical patient will simulate the symptoms of known diseases to such a degree that even physicians can sometimes be deceived. Where the deceit is conscious and deliberate the use of symptoms to evade responsibility is called malingering. Hysteria is used as a diagnostic classification when the patient seems to be fooling himself as well as others and does not realize that he is doing so.

4. *Anxiety*. Persons diagnosed as anxiety neurotics usually are convinced that they must resign themselves submissively to inevitable catastrophe. They are sure the future will bring evil, they know they shall fail, but they must keep going. They blind themselves to the real issues of life by chronic worry.

5. *Psychasthenia*. These persons hunt safety by clinging to methods of thinking and acting acquired in their early years. Resistance to change is the keynote of their living. This adherence to known patterns is aided by the development of

fears that inhibit innovations, by strict ritualism, by developing rigidity in their thinking patterns, and by manifesting a reluctance to make any clear-cut decisions.

6. *Manic depressive*. The manic-depressive personality finds solace in work or activity of any sort. He uses activity as a distraction device to draw his attention from his troubles. He cannot refuse a job because that means an additional safeguard against time to think of himself; he hates to finish a job because that means a lessening of the demands on his time, and if he does complete something he is likely to be sad about it unless he gets another job to take up immediately. The completion of a job is not cause for a celebration; instead it is cause for grief. Once he gets into a mood of depression, it may be some time before he again becomes gay. It is as though he were saying, "My troubles are upon me, and the burden is heavy."

7. *Hebephrenic schizophrenia*. Those who fall into this classification are embodiments of the philosophy that the only real happiness that can be attained lies literally and only within one's self. Whether the shunning of the outside world or the courting of internal bliss is the driving force in these individuals, it is hard to ascertain, but the end result is the same. They live in a little world of their own, usually avoiding all contacts with the world except those they are forced to make.

8. *Simple schizophrenia*. Nothing matters. If one can develop a profound indifference to all the irritations in life, how much easier living can be! Those who are placed in this diagnostic group not only try to do this, they actually succeed in becoming profoundly unmoved by the attempts of others to motivate them; they are not subject to insult or flattery and drift through life with no concern for anything or anybody.

9. *Catatonic schizophrenia*. As one patient put it, life is like running on the top of a narrow wall with monsters ahead and demons behind; one is always poised between equally horrible threats.

10. *Paranoia*. The dominant note of the paranoid individual is the protection of his own self-esteem against inadequacies or failures through hating those "enemies" who

rob him of his just rewards or interfere with his activities, or detract from his successes. Or he may develop the notion that he is really a great person but a misunderstood and unappreciated one; usually the hate notion pervades under the surface in this case too. Those around him are jealous of him and contrive to bring his downfall, and he hates them for it. He stays up nights thinking of new ways to avenge himself on these supposed enemies.

11. *Epileptic personality.* Whether or not this term is the proper designation, there are persons who are overemotional in all their responses. They lose their tempers easily, but they are likewise extravagant in their manifestations of love. If they take to eating they become gluttons; if they are religious they become fanatics.

87. **Rational interpretation of symptomatic cues.** In recent years we have been frequently warned against the error of assuming that, when a person has been placed in a certain classification or category, he will behave in every respect according to our stereotype of that classification. If our purpose is to understand the individual, any such classification of life codes as the foregoing must be used with the full understanding that it is a real aid to thinking but that it can get in the way of clear analysis if one is not careful. For example, suppose a person is found who washes his hands meticulously. What does such an activity signify as to the life-code of the hand-washer? A number of things, perhaps. The person may have developed the habit of being clean and nothing more. Suppose we observe the patient a little more closely and find that he overdoes the washing (according to our standards) and that he spends hours at this occupation. We could name his activity a "hand-washing compulsion" and take that as evidence that he should be classified as a psychasthenic and that he was using the hand-washing ritual as a sort of device to keep himself from being modified by the changing world. Or, we might decide that his cleanliness was part of the pattern of conceit of a paranoid and his cleanliness was merely an indication of self-centeredness. Or, he might be a catatonic whose hand-washing was but one sign that he knew not which way to turn. Again, it might be the

result of a feeling of guilt and a sort of distraction device—the sort of thing that might characterize a manic-depressive person. In short, such a cue as hand-washing cannot be interpreted in isolation but according to the company in which it is found. These patterns of cues, or symptoms, are called *syndromes*.

Furthermore, the mere presence of a pattern of symptoms, or syndromes, is still not enough to give us a complete picture of what is going on. The way in which these are related to other factors in the personality and to other aspects of the forces surrounding the patient is also pertinent. A person must use intelligent interpretation and adhere to the canons of inductive logic or he will go astray.

Lest the reader think that neurotic symptoms are not subject to the same sort of distortion that results from the pranks of a mischievous boy, it should be emphasized that defense mechanisms have as one primary purpose the concealment of the living code that gives rise to them. Hence, no fixed value can be given to any one symptom or syndrome, nor can we expect it to be consistent in meaning, or to repeat itself in just the same form. It is the inconsistencies, not the uniformities, in personal behavior that provide the best cues for understanding the individual. For this reason, the diagnostician must be continually on the alert for cues that might escape him; he must never become complacent over his interpretation up to the present moment; and he must realize that, even though he may be on the right track in his judgment, the course of mental disorders is a winding road—one cannot see very far ahead.

One more warning. Behavior syndromes should never be confused with the basic causal factors that led to the use of defense activities. Certain causal situations may lead to one behavior pattern more easily than to another. For example, rejection by one's mother may make it easy for a person to feel insecure and may tempt him to compensate by fighting. But the recognition of such a possibility is no warrant for reversing the terms of our reasoning and for assuming that, when we find a person who struts in a compensatory manner, he has been rejected by his mother. We have warned re-

peatedly against this error in logic, but it bears repeating because it is so frequently engaged in even by those who should know better.

To state the simple logical form again: Suppose it has been demonstrated that rejection is often (or even always) followed by a feeling of insecurity in the rejected child; it does not follow that a feeling of insecurity is any evidence at all of that person's having been rejected. To reverse the proposition it would have to be shown that insecurity could never be caused by any condition other than rejection. It might be true that all cases of rejection are followed by feelings of insecurity and yet, at the same time, the greater proportion of feelings of insecurity could be caused by factors other than rejection.

88. Changing the personality code. Having arrived at a tentative formulation of the code that lies behind the overt symptoms of a patient, the next step is to determine what changes, if any, should be sought. There is no simple answer to this question. This is no field for a person who has a preconceived notion of what life should be. The purpose of studying individual differences is not to attempt to make all persons alike. The formula customarily used is that anyone who is so warped that he may do damage to himself or to others needs to be either restrained or redirected. Such a vague statement is subject to all sorts of interpretation, however, and no one can determine just where to draw the line. The best workable formula is to permit the individual to manifest his own desire for change—unless he is a real social menace—before any attempt is made to help him change in the desired direction.

After the code for any patient is formulated, various characteristics of the whole pattern become clear. (a) The code may be a relatively simple one and the patient may adhere rigidly to it. (b) It may be relatively complicated and unformed and hence subject to all sorts of inconsistencies. (c) It may be fundamentally a worthy code, followed in a fairly normal manner. In such a case the individual should, by all means, be permitted to work out his own life with no interference. (d) It may be a faulty code (from the point of view of the patient's own welfare) and may call for some attempt at modification. (e) It may be a good code but the patient

may have become habituated to faulty ways of working it out. In such a case the patient needs to be instructed in a better way of reaching his objectives.

These and other possible combinations may be sifted down to two fundamental factors: the code of living of the patient, and the habitual patterns he has adopted for working it out. The latter provide the syndrome pattern that leads to placement in the various diagnostic groups. In brief terms, the objective of diagnosis should be to find out whether the patient has specialized too strongly in one syndrome and, if so, to help him find some other patterns of behaving so that he will not conform exactly to any one of the foregoing diagnostic patterns.

For this reason, the student of abnormal individuals cannot permit his analysis of a personality to be distorted by too much interest in causes for the code of living or for the defense mechanisms he finds. If a person has the fixed and overdone habit of getting out of his difficulties by the manufacture of delusions, for example, he will create delusions when he loses money, when he flunks a course, when his girl jilts him, when he gets fired from his job, when someone bumps into his car, when he gets a stomach-ache, when his son is killed in the war, when it rains too incessantly, or when the sun is too hot. These are the immediate causes for the mechanism of delusions. Such a person does not need to have life made easier; he needs to be taught other ways of reacting than the manufacture of stories to convince himself and others that he is the victim of unfair discrimination.

89. The normal person resists typing. Whereas the psychotic individual falls into a definite personality type that clinicians have learned to recognize, the normal person defies such attempts. The pathological individual acts in a way that is characteristic of him regardless of the needs of the moment; the normal person fits his reaction to the needs of each situation. The danger signal is not so much what classification your friends, relatives, or enemies put you in; it is that they can classify you at all.

Now, of course, some persons, recognizing this fact, attempt in a superficial manner to do the thing that will make it hard for others to type them, but underneath such overt

behavior is an underlying rigidity. For example, one man who had a hand-washing compulsion was told by a fellow resident of a psychopathic hospital that he would never be discharged as long as he continued to wash his hands all the time. Consequently, he refrained and gave the appearance of a person who was not a hand-washing specialist—until he thought he was not being observed. The trait was still there in spite of his attempt to hide it. It is this impulse to resist codification that leads an old person to behave in a childish fashion. He is urged by his friends to “act his age,” which means to behave according to the stereotype they have established for him. What he is doing is making a belated attempt to be versatile, an effort that is likely merely to make him appear ridiculous. However, many a man who has been retired has taken a new lease on life when some emergency demanded that he give it his attention.

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CHAPTER IV

DISORDERS OF INTELLIGENCE

XX. DEFINITIONS OF INTELLIGENCE

Intelligence is hard to define. But we shall need a working knowledge of its meaning before we deal with its abnormalities. There is no complete agreement among authorities as to the exact definition of intelligence, and yet the intellectual behavior of some persons makes it obvious that they are deficient in intelligence, whereas others are plainly superior in this respect.

90. **Social or economic criteria of intelligence.** The British Royal Commission began in 1904 to study the problems of mental deficiency, to define standards for normal intelligence, and to differentiate the various degrees of defect, as well as to formulate laws to care for those who were defective. Since their aims were practical, their definitions were drawn along social and economic lines. They distinguished four types of mental defectiveness as follows:

1. Idiots are those persons who are mentally defective to such a degree that they are unable to guard themselves against common physical dangers.
2. Imbeciles are those persons who are mentally defective to such a degree that they are incapable of managing themselves or their affairs with ordinary prudence.
3. Feeble-minded persons (corresponding to the moron group as defined by American writers) are those persons who are mentally defective to such a degree that they need care, supervision, and control for their own protection or for the protection of others.
4. Moral defectives are those persons whose mental defectiveness is coupled with strongly vicious or criminal propensities and who require care, supervision, and control for the protection of others.

American writers do not usually consider moral defectiveness as a characteristic of mental deficiency, and neither do many English writers today. They have retained the first three types (idiot, imbecile, and moron groups), but use tests

instead of or to supplement social and economic criteria to determine into which group any particular person shall be placed.

Social and economic criteria alone may lead us astray in determining mental deficiency, since they are subject to so many different interpretations and twistings. For example, one judge, relying blindly upon these criteria, refused to admit that a certain woman was not intelligent, arguing that for a period of five years she had not lost some property she owned. It was found that she could not very well have lost it because it had been willed to her with the restriction that it could not change hands during her lifetime. This is not to say that the decision as to what to do with a person who shows up poorly on a mental test should be determined by the test score alone. Social and economic factors play a very important role here. As a matter of fact, we have repeatedly insisted that clinical judgments should never be made on the basis of one piece of data alone, such as a mental test score. All available and pertinent information should be utilized. The beginning point for the psychologist, however, should be a mental test or developmental norms, not social and economic criteria, in judging feeble-mindedness. (Gesell and Amatruda, 33)

Opposed to the notion that social and economic criteria are the most promising indications of intelligence is the contention that intelligence is what the intelligence tests measure and that the feeble-minded are merely those who make up the lower end of the distribution of scores on the intelligence tests. Several investigators and workers in the field do not agree that it is quite as simple as this. (Doll, 26; Stoddard, 76) Not only are there intelligence differences between the normal and the feeble-minded in degree but in complexity as well. And these differences give rise to what appear, at least, to be qualitative differences. Doll (26) proposes that the essential conditions of mental deficiency are such that the persons affected show (a) social insufficiency, caused by (b) subnormal intelligence which (c) has existed from an early age. He feels that a label of mental deficiency is not warranted unless all three of these conditions are met. Thus subnormal intelligence explains mental deficiency rather than

being identical with it. This conception makes it easier to understand that a person with an I.Q. that might place him in the moron group is able to make an adjustment to society good enough to make him self-sufficient. Favorable social circumstances can foster such an adjustment, and he will not be considered mentally deficient unless at some time he does fail in his social relations because of his low intelligence.

91. Control of mental processes. In Terman and Merrill's *Measuring Intelligence*, published in 1937, they continue to follow the definition of intelligence subscribed to in Terman's *The measurement of intelligence*. This definition is taken directly from Binet's earlier conception and is as follows: Intelligence is "(1) the tendency of thought to take and maintain a definite direction, (2) the capacity to make adaptations for the purpose of attaining the desired end, and (3) the power of self-criticism." (79, p. 45) This definition is largely one of controlling one's mental processes, and the Stanford-Binet tests have been highly saturated with such items as will yield an intelligence quotient, or index of brightness. That Terman and Merrill (80, pp. 28-29) were not unmindful of other factors involved in the practical use of intelligence tests may be seen from the following statement: "Whatever index of brightness is used, some will claim too much from it and others too little. The uninformed will read meaning into it which it does not connote and the overenthusiastic will, in too exclusive dependence upon it, ignore other lines of information which should be taken into account."

92. Groups of abilities. Spearman proposes that intelligence is composed of two sets of factors: the *g*, or general factors, and the *s*, or specific factors. These sets overlap so that some *g* is found in each *s*. Thurstone, by the method of factor analysis of many tests, claims to have found several *primary mental abilities*, such as induction, memory, spatial, perceptual, numerical, verbal relations, word fluency, restriction, and deduction. These are interrelated to some extent but not in the way Spearman suggests. Thorndike's description of intelligence is in terms of at least three kinds: (1) abstract intelligence, or the ability to deal effectively with ideas and symbols, (2) social intelligence, or the ability to deal effectively with people, and (3) mechanical intelligence, or the

ability to handle effectively concrete objects and situations.

93. Configurations. In accordance with other more general tendencies in the field of psychology, intelligence has been defined in terms of configurations of capacities rather than sum-totals. The implication here is that each capacity is a function of the total organism and all are interrelated, rather than having any real independence. Wechsler (85) suggests that "Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment. It is global because it characterizes the individual's behavior as a whole; it is an aggregate because it is composed of elements or abilities which, though not entirely independent, are qualitatively differentiable. By measurement of these abilities, we ultimately evaluate intelligence. But intelligence is not identical with the mere sum of these abilities, however inclusive. There are three important reasons for this: (1) the ultimate products of intelligent behavior are not only a function of the number of abilities or their quality but also of the way in which they are combined, that is, upon their configuration. (2) Factors other than intellectual ability, for example, those of drive and incentive, enter into intelligent behavior. (3) Finally, while different orders of intelligent behavior may require varying degrees of intellectual ability, an excess of any given ability may add relatively little to the effectiveness of the behavior as a whole. It would seem that, so far as general intelligence is concerned, intellectual ability as such merely enters as a necessary minimum."¹ Another definition of intelligence that is in general configurational is that given by Stoddard. (76) "Intelligence is the ability to undertake activities that are characterized by (1) difficulty, (2) complexity, (3) abstractness, (4) economy, (5) adaptiveness to a goal, (6) social value, and (7) the emergence of originals, and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces."

94. Intelligent behavior as adjusting to novel situations. We must keep in mind that the only way we can judge intelligence is by the observation of persons in situations that call for what we designate as intelligent behavior. Perhaps this

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is most easily and frequently done when the person is in new situations. Many of the above definitions imply this. In a sense every situation is new; i.e., not just exactly like any the person has met before, but many are more novel than others. While a person may be showing intelligent behavior by doing the same things he has done before under similar circumstances, his intelligence is better reflected in reactions to new situations. Some of the earlier writings on intelligence carried this same implication. But they expressed it as "the power of readjustment to relatively novel situations by organizing new psychophysical combinations." Stern (75b) said intelligence is "a general capacity of an individual consciously to adjust his thinking to new problems and conditions of life." Freeman (32a) defined intelligence as "the facility with which the subject-matter of experience can be organized into new patterns."

Now that we have seen some of the attempts to describe intelligence, let us see what has been done in scaling intelligent behavior.

XXI. MEASUREMENT OF INTELLIGENCE

The degree of intelligence cannot be determined by any form of clinical examination based on appearance. Definite tests have been devised for this purpose. In the following section we shall give a brief history of the development of these tests, indicate some forms that are used and outline the classification of intelligence levels that has resulted from their use.

95. Development of intelligence tests. Pioneer studies in the measurement of intelligence were made by Galton in 1883, by Cattell in 1890, and by Binet and Henri in 1895. These were immediately followed by similar studies by others. The first contribution that found wide acceptance and that proved to have practical value was the Binet-Simon scale published in 1905. Even though intelligence testing is young it has been established so firmly that it is an essential part of our educational and social life.

During the early stages of development (and still in some quarters) a bitter controversy was waged concerning the nature of the mental ability measured by these tests. Some contended that the tests measure native capacity alone; others,

that they measure the effects of education and environment. The view most psychologists hold today is that intelligence tests measure neither native endowment nor educational achievements exclusively. They merely indicate the ability of an individual at the present moment and tell nothing about how he acquired that ability. This is the sensible view to take. We know that persons can be born with brain defects so severe that they can never develop normal intelligence. There are other cases in which the individual may have normal capacity and may develop until something comes in to disturb his mental growth with the result that he progresses no farther. There are still others who make normal or superior progress up to adult life and then deteriorate. A test will indicate whether or not a person has normal intelligence, but it tells us nothing about why he is normal or abnormal. In other words, performance on an intelligence test is no more than a symptom, and like all other symptoms that we have discussed, it may indicate various underlying causal factors.

The strength of intelligence tests lies in the fact that they have been standardized empirically. Hence it is not essential that psychologists completely agree upon any definition of intelligence, valuable as this is. If it can be shown that those who make high scores in the test show evidences of ability in other ways, and those who make low scores in the test give other evidences of lack of ability, the findings of the test may be considered valid, even though we may not know exactly the nature of the ability that we are measuring.

Tests usually contain samples of the sort of mental tasks that we must accomplish in everyday life, and ordinarily any one test scale comprises tests for a number of different kinds of mental processes. To be sure, any test situation is more or less artificial, but in so far as the test brings into play the same processes that one is using in the typical tasks of life, it indicates the degree of ability the person possesses.

96. Age scales. The most widely used tests of intelligence until recently were age scales, individually administered. For clinical purposes the individual test is much to be preferred to the group test. Not only can the examiner judge the co-operation the person is giving in such a case, but he can also gain valuable insights about him; some of these may not bear

directly on his intelligence, although others may have such bearing.

1. *The Stanford-Binet Examination.* The test, mentioned above, developed by Binet and Simon, was an individual test of the age-scale type. It has been the most frequently used clinical test, in its Stanford revisions made in 1916 by Terman (79) and in 1937 by Terman and Merrill (80). The validity of this scale depends largely upon strict adherence to standard methods of giving and scoring. The Stanford-Binet test is typical of age scales. It is based on the assumption that intelligence progresses with age in an orderly sequence up to a certain point and that suitable subtests can be found for each age. Thus there is in the scale a series of groups of tests, one group for each age from age two through age fourteen with an additional group each for Average Adult and three levels of Superior Adult. The Stanford-Binet examination is more highly saturated with verbal items than with "performance" items.

2. *The Kuhlmann Revision of the Binet Test.* Kuhlmann has published the most elaborate and painstaking revision of the Binet scale, which carries the test down to the three months' level and adds much new material. It is less dependent upon the use of language than is the Stanford revision, takes more time to administer (except in the abbreviated form) and requires much more training and skill on the part of the examiner.

3. *Performance Scales.* Stutsman (77) has devised a performance type scale (the Merrill-Palmer scale) based on the age-scale concept. So also have Pintner and Paterson (55) and Grace Arthur (4). Language is at a minimum, the child being asked to perform a series of motor tasks which presumably require intelligence for their execution. Perhaps because ours is predominantly a verbal world these have not had the popularity or validity of the verbal scales, but they are invaluable for persons with a language handicap and as a check on the verbal scale.

97. *Point Scales.* Several criticisms have been leveled at the age scales. (Stoddard, 76; Wechsler, 85) Point scales have been proposed as more valid and as making fewer unwarranted assumptions. A scale now being widely used, espe-

cially for adults, is the Wechsler-Bellevue test of mental ability. Like the Stanford-Binet this is an individually administered test, but here the similarity ends. In the case of the Wechsler-Bellevue, the same subtests are given to all, there being no groups of tests for different ages. An adult scale and an adolescent scale (ages 10 to 16) use the same items, differently standardized. The degree of brightness is determined by the statistical distance an individual is from the average. In other words, the number of "points" he makes on the scale determines his score. Many group tests are constructed on the same principle. The Army General Classification Test and the American Council on Education Psychological Examination are examples.

98. Classification on the basis of intelligence tests. The advent of mental testing has made the estimation of mental ability so nearly precise that clinical descriptions are always supplemented by the results of intelligence scales.

1. *Mental age.* The first test scores were expressed in terms of mental age. A large number of children of different ages were given various tests and by this means it was discovered which test questions the average child of 3, 4, 5, *etc.*, years could answer. When these same tests are given to subjects, their average scores are expressed in terms of mental age. This does not mean that the subject's mentality is equivalent to the mentality of a child of the age indicated by his score. It simply means that in these tests he did the same grade of work as a child of that age could do. The child of a mental age of six, for example, has potentiality for development, whereas the adult with a mental age of six probably has not. The two are not comparable in any sense except that their test scores are the same.

2. *Intelligence quotient.* The meaning of a score in terms of mental age cannot be interpreted apart from the chronological age of the subject. A child of six with a mental age of eight is certainly different from a child of ten with a mental age of eight. The intelligence quotient was devised to express in a single figure a score that would take into consideration both the mental and the chronological ages of the subject. The quotient is determined by dividing the mental age by the chronological age. A child of six with a mental

age of eight has an intelligence quotient (I.Q.) of 1.33; while a child of ten with a mental age of eight has an intelligence quotient of .80. In practice, the decimal point is omitted. In computing the intelligence quotient for adults, a fixed age is used in place of the chronological age; but there is still discussion as to whether this fixed quantity should be 16, 15, or 14 years. Because of the familiarity of the I.Q. concept, even scores on point scales sometimes are translated into I.Q. terms as well as being expressed in percentile form.

3. *Descriptive equivalents of I.Q.'s.* Earlier in this chapter we gave definitions of three grades of feeble-mindedness. The psychologists have adopted these names but have defined them in terms of I.Q. Their classification throughout the entire intelligence range is as follows:

<i>Class</i>	<i>Range of I.Q.'s</i>
Near genius	140 and above
Very superior	120-140
Superior	110-120
Normal	90-110
Dull	80-90
Borderline	70-80
Moron	50-70
Imbecile	25-50
Idiot	0-25

Tests are part of every well-organized school system today. The technique of giving, scoring, and evaluating tests is a special field the importance of which every school administrator should recognize. Indeed, this technique is too important to be treated adequately in the brief scope of these pages, and we have omitted its discussion from this text.

99. **Factor scales.** Thurstone (82a) and Spearman (75a) have suggested that scales be based on studies that show the essential components of intelligence. Thurstone has given a large number of subtests to a large group of people and "factored out" the primary mental abilities involved. Spearman has used somewhat similar methods and has come to the conclusion that intelligence is not composed of primary mental abilities but of a general component found in all intellectual behavior and several narrowly specific components found only in certain kinds of behavior. Tests based on these

theories and experiments have not been widely used in abnormal psychology, partly because they are still in experimental stages.

100. **Usefulness of measurement of intelligence.** If one can judge from the number of intelligence tests given in clinics, schools, courts, hospitals, etc., during the past few years, measurement of intelligent behavior must have proved of real value. The empirical use of intelligence test scores, regardless of what they measure, has established a validity for predicting certain kinds of behavior within broad limits.

XXII. CLINICAL DESCRIPTION OF TYPES

The great proportion of feeble-minded individuals have no distinctive appearance, and cannot be distinguished from normal persons on the basis of any physical characteristics. On the other hand, there are some varieties of feeble-mindedness which are caused by factors that also produce physical defects. These will be treated in this section.

101. **Microcephaly.** This group comprises not more than about 5 per cent of all mentally defective individuals. The



FIG. 2.

A microcephalic of imbecile grade of mentality.

distinguishing characteristic of the microcephalic is, as the name implies, an abnormally small head of usually less than seventeen inches in its greatest circumference. There is usually a marked recession of the frontal section of the cranium as well as a flattening of the occipital region, giving the head a conelike appearance. The hair is likely to be very thick, coarse, and wiry. A typical microcephalic is shown in Figure 2.

As the extremely small size of the skull suggests, these persons have very small brains. The normal, average brain weight is 1375 grams for males and 1244 for females. Microcephalic individuals have been reported with brain weights as low as 170, 198, and 219 grams. Most of them weigh

several hundred grams more than these, but all are decidedly below normal in weight. Defects in the structure of the brain are probably more important in causing mental defect than its small size. (Baker, 7)

In mentality, although they are scattered through the entire feeble-minded range, the majority of microcephalics are in the imbecile group. From this it can be seen that the diagnosis of microcephaly is based on appearance and tells little about the actual mental ability of the individual patient.

There is strong evidence that microcephaly may be caused by direct damage to the foetus during gestation; this damage may be the secondary result of some diseased condition of the mother, or of direct injury to the foetus owing to mistreatment of the mother during pregnancy. (Penrose, 53)

102. Macrocephaly. The macrocephalic has an abnormally large head. In many cases there is no increase in cerebro-spinal fluid but rather in the brain tissue itself. This hypertrophy of the brain is due to an increase not in the active nerve cells, but in the supporting elements known as glia cells. The size of the head in this condition may range all the way from the normal (about 22 inches) up to 25 inches.

The distinction between the enlargement due to glia formation in the brain (macrocephaly) and an increase of cerebro-spinal fluid (hydrocephaly), is largely in the shape of the head. The former is likely to be more square than the latter and does not show the characteristic bulging at the fontanelle, the sutures, and the temples.

103. Hydrocephaly. Hydrocephaly is caused by either the blocking of the outlets of the cerebro-spinal fluid from the ventricles of the brain or the failure of this fluid's absorption. The collection of fluid may be either inside or outside the brain but the chronic hydrocephalus connected with mental deficiency usually accompanies a collection of excess fluid within the brain. This excess, occurring when the skull is plastic, causes a hypertrophy so that there occurs a gross enlargement of the head. The excessive secretion is accompanied, in many cases, by a lack of normal development of the brain. The boy shown in Figure 3 has a head circumference of nearly 27 inches, and a 30-inch circumference has been reported. (Baker, 7) If the excessive secretion does not begin

until the individual is mature, there may be hydrocephaly with no enlargement of the skull.

The peculiar enlargement of the skull makes diagnosis easy. The hydrocephalic skull is uniformly increased in all directions, and thus tends to assume a globular shape. The forehead is high and projecting, and there is usually a characteristic bulging at the root of the nose, but the greatest circumference is at the level of the temples. The fontanelle is tense, and the sutures often widely separated... The scalp is thinned, and often marked by large and prominent veins. The excessive size of the cranium, in conjunction with the small face, causes the head, as seen from the front, to have a very characteristic conformation, resembling an inverted pyramid, thereby producing a curiously "top-heavy" appearance. (Tredgold, 83, p. 292)

Hydrocephaly can exist in different degrees with corresponding variations in intellectual ability from lowest-grade idiot to normal. The causes are diverse. In some cases it accompanies chronic meningitis or tumors (usually either syphilitic or tubercular) at the base of the brain. In others, no specific lesion can be found. Microcephaly is not yet uniformly treated successfully by surgery, but in the case of hydrocephaly some suggest that if it is due to malformation of the cerebellum, surgery should be tried. (Benda, 9) Nor is the remedy in draining off the spinal fluid. The treatment of the principal cause is, in many cases, ineffective, because damage to the brain substance has usually already been accomplished before any



FIG. 3. HYDROCEPHALIC, AGED 14.
Head circumference — $26\frac{3}{4}$ inches.
(From A. F. Tredgold, *Mental Deficiency*.)

treatment is instituted. Should the condition be remedied in early life, it might be possible to train the child to greater achievements than if he were permitted to suffer from the original lesion, but in few cases can it be expected that the

condition will be entirely remedied by medical treatment. So far as disposition is concerned, most hydrocephalics are easy to get along with and friendly.

104. **Mongolism.** This variety of amentia was so named from a supposed facial resemblance of these persons to the members of the Mongolian race. A typical case is shown in Figure 4.

There are three principal anomalies that characterize mongolism. (1) The skull is small, rounded, and shortened in its anterior-posterior measurement. The face is flattened without any marked recession of the forehead, such as is found in the microcephalic. The occipital portion of the head is likewise flattened. (2) The eyes are narrow and slope upward and outwards from the nose. This characteristic gave the condition its name, even though it is not as constant a criterion as the other two characteristics. (3) The tongue is quite unusual, as shown in Figure 5. It is usually large and has across its surface great fissures. These fissures probably result from a combination of two factors. The mucous membrane of these patients is particularly susceptible to injury. Also, mongols are strongly inclined to be tongue suckers. These two factors together furnish a plausible explanation for the tongue fissures.



FIG. 4.
A mongolian girl of 8 with the mental level of an imbecile. (From A. F. Tredgold, *Mental Deficiency*.)

In addition to these distinctive signs these patients have a number of other anomalies that are not so constant and that need not concern us. The interested reader can find many recent studies not only of external characteristics but also of brain and biochemical changes. (Benda, 9; Bixby, 14; Jervis, 43; Tennies, 78) Psychologically, mongols are of

interest because they are invariably defective in intelligence, probably more often in the imbecile and moron group than in the idiot. Socially, they may appear more advanced than they do mentally. (Pototzky & Gregg, 58)

Mongolism is always congenital. There have been no observed cases of normal children becoming mongoloid as they grow older, as may happen with endocrine dystrophies. Mongolism begins probably not later than the eighth week



FIG. 5.

A mongolian showing fissures of the tongue

of pregnancy and may be considered essentially a retardation of development. Penrose (53) asserts that the name "foetalism" would be a better name for the condition than "mongolism," since the peculiar characteristics may be regarded as remnants of foetal life. The most frequent concomitant of mongolism is the advanced age of the mother, and this fact, with other supporting evidence, has led to the thesis that the condition results from a defect in the ovum, although other causes have been advanced. (Bleyer, 15; Benda, 9; Bixby, 14; Jervis, 43; Tennies, 78)

There is little evidence that the intelligence of mongols can be improved, although height and weight have been improved with certain endocrine therapy. Benda (9a) claims to have anticipated mongolism in the foetus and warded it off by treating the mother, and Jervis (43) reports use of roentgen rays and endocrine therapy for mongolism.

105. **Cretinism.** "Although cretins have been recognized and remarked upon for hundreds of years (even by such writers as Juvenal, Pliny, Strabo, as well as by the more modern Paracelsus), it is only comparatively recently that the cause of this condition has been at all understood. It is

now established beyond doubt that cretinism is . . . dependent upon an absence or diminished secretion of the thyroid gland." (Tredgold, 83, p. 312) When the condition is present from birth, it is called *cretinism*; when it develops later in life, it is called *myxedema*.

The (cretin) infant gives few signs of intelligent response to his surroundings. He makes only automatic reactions to stimuli. The head is relatively large, as a rule; the fontanelles, which ought in normal babies to be closed by the end of the sixteenth month or thereabouts, remain open long after the second year has ended. The lips are thick, the tongue is thickened and often protrudes from the mouth; the malar (cheek) bones are prominent. The stature is dwarfed; the legs short and bent. The mental condition is one of complete idiocy or imbecility. More than one-half of all cretins are said to be deaf, or mute, or both. The teeth are slow in their eruption, atypical in location, badly shaped and deficient in enamel. They easily decay. The mucous membranes are prone to inflammation . . . The cretin, like other idiots, is untidy in his habits. The skin is rough and dry; the hair dry and coarse; the oil and sweat glands act imperfectly; the temperature is subnormal . . . The subcutaneous fat is irregularly disposed in pads—over the clavicles (collarbones) perhaps, or about the legs . . . The abdomen is protuberant, hernias of various kinds are observed, and in males the testes may fail to descend. (Berkeley, 11, p. 97)

Marked improvement in these cases has been produced by thyroid therapy, when such treatment is begun early enough. If treatment is delayed, little can be done to ameliorate the condition. (Brown, Bronstein, and Kraines, 16)

Cretinism accounts for from 3 to 5 per cent of all institutional cases of feeble-mindedness.

106. **Pituitary dystrophy.** Next in importance to thyroid disorders, in their relation to intelligence, are those associated with anomalies of the pituitary gland. Various clinical types are found.

The most common form of pituitary dystrophy is known as *dystrophia-adipso-genitalis* (Fröhlich's *syndrome*) or the "fat boy" type. It is easily diagnosed because of the feminine distribution of fat and the infantile genital organs. If begun in time, pituitary therapy may be beneficial in such cases. One case, for example, is cited of a rise of 10 I.Q. points in eight months. (Chidester, 20)

Other types of pituitary dystrophy are *gigantism* and *gigantism with fatness*. In rare cases this type may be asso-

ciated with progressive deterioration of the retina of the eyes, giving rise to progressive night-blindness, when only colored lights can be seen.

Mental deficiency of all degrees is likely to be found as a concomitant of these pituitary disorders.

107. **Birth injuries.** Birth injuries account for 5 to 10 per cent of all cases of feeble-mindedness. Doll, Phelps, and Melcher (25), in summarizing the effects of birth trauma, list five: (1) early mortality, (2) minor damage, which is subsequently overcome through the repair of natural growth, (3) motor handicaps of various degrees of severity, with or without mental deficiency, (4) mental deficiency, with or without motor handicaps, and (5) serious behavior disorders or personality defects.

These authors point out that there has not been a true realization of the frequency of birth injury because of the tendency of the early physical symptoms to clear up and be forgotten. Ten per cent of all children suffer damage at birth sufficient to produce blood in the cerebro-spinal fluid, and there is no way of telling how many suffer minor injuries, especially if these do not become manifest in the motor responses of the child. Yet injury that does not affect the motor areas may very possibly cause mental deficiency and be mistaken for congenital feeble-mindedness (so-called "primary amentia") of any degree from the lowest grade to normal.

Improved obstetrical methods are not the only means of prevention of birth injury. In fact, in many cases, the damage may already be done, and the physician is forced to make an instrumental delivery. In others, anoxia may have occurred due to prolonged labor. The use of vitamin K (to stop hemorrhaging), endocrine treatment, incubators, and improved feeding frequently can prevent the injury's being any worse than necessary and may produce some improvement. (Benda, 9a)

In an intensive study of twenty-six cases of birth trauma, Doll, Phelps, and Melcher found that maturity, improvement in the physical condition, and special training tended to bring with them a betterment in the mental status. Mental deficiency from birth injury seems to benefit more from careful educational aids than do some other types. Since it is very

difficult to determine the specific cause of any case of retardation, it would seem wise to give each child the benefit of the best possible training rather than to abandon some individuals as hopeless before they are given adequate opportunities.

108. Encephalitis lethargica. Although *encephalitis lethargica* (sleeping sickness or epidemic encephalitis) is not a disease of frequent occurrence, it results in mental effects of one sort or another in 70 per cent of the cases. About 2 per cent of the defectives in institutions have suffered from this disease. Intelligence deteriorates slowly and progressively after the first effects of the disease, and this deterioration may reflect progressive damage to the brain. (Brown, Jenkins, and Cisler, 17)

Although the intellectual deterioration resulting from epidemic encephalitis is not as great as some other types of cerebral deterioration, the destruction is so widespread that other phases of the personality of the patient are radically disturbed. These patients manifest antisocial tendencies that seem to be beyond their control, such as biting, scratching, slapping, or throwing missiles at anybody who happens to be near, whether a friend or a possible enemy. They have an increase in personal vanity and a very childish desire to be in the limelight. Any impulse they happen to receive leads to immediate expression regardless of its nature or possible consequences. Re-education of patients suffering from either of these diseases has not been very successful.

109. Syphilis. Syphilis is an infectious disease caused by a microorganism which often attacks the blood-vessel walls, causing deterioration and consequent hemorrhages. It may cause destruction of tissues in any part of the body and at any age, from the foetal period until old age. When there is destruction of nervous tissues in the brain, intellectual deterioration results, and it is in this that we are especially interested in this chapter. Further discussion of neurosyphilis will be found in a later chapter.

1. Congenital syphilis. Congenital syphilis is a disease that infects the child before birth. Its frequency among institutional cases of mental defectives is about 10 per cent. There is no longer any doubt that syphilis present at birth is congenital, and not inherited through the germ plasm.

"The personal history of a patient suffering from congenital syphilis can be very characteristic and may take the following form: The child appears normal at birth but somewhat under weight. It remains rather small and appears anaemic. Nothing else is noticed until perhaps the age of one year, when it is suddenly found that a limb is paralyzed or that one eye deviates outwards. After this the paralysis may grow steadily worse and may be associated with epileptic fits, mental retardation becoming fairly obvious." (Penrose, 53, pp. 121-22.)

Instead of depending on visible signs of syphilis, such as Hutchinson's teeth (peg-shaped), lesions of mucous membranes, giving rise to "sniffles," deformities of bones and joints, lack of sensitivity of joints, and peculiar depression of the nose, clinicians now rely on the much more precise Wassermann, Kahn, and other laboratory tests of the blood and spinal fluid. Many cases of juvenile paresis do not show outward signs, anyway. One study reports, as a matter of fact, that 40 per cent of the cases of juvenile paretic neurosyphilis were fundamentally retarded in mental development before sufficient other signs and symptoms appeared. Feeble-mindedness is viewed as a part of the juvenile paresis (Menninger, 50). Another study found that the I. Q.'s of children with syphilis involving the central nervous system were perceptibly lower than those of children with syphilis without central nervous system involvement. Syphilitic children were also lower intellectually than non-syphilitic siblings. (Jenkins, Brown, and Cisler, 42).

2. *Dementia paralytica, paresis, or general paralysis.* Dementia of a very marked sort occurs when the disease of syphilis invades the brain. Marked symptoms of dementia may not appear until middle life or later, even though the initial infection may have occurred several—usually at least ten—years earlier. The signs of deterioration come on insidiously, ethical and social judgments, and memory being affected before the less complex functions.

Patients seem to lose ability to make social and judgmental discriminations. The once orderly, neat, punctual individual becomes disorderly, slovenly, and undependable. Business acumen deteriorates, and morals may suffer a reversal. Inter-

est in home, family, business, or profession dwindles, and undesirable companions may be sought.

One of the most striking psychological characteristics of the paretic is a progressively more severe memory defect. Recent events are lost first, but more remote ones are also not recalled. Landis and Rechetnik (46) list other psychological disturbances in the following order: impaired insight and judgment, decreasing efficiency with numbers, abnormality of the emotional life, loss of ability to comprehend what one is reading, impaired memory and orientation, inefficient writing, bizarre thought, and general attitudinal difficulties. We see, then, a big change in the intellectual efficiency of the patient. He is behaving in a demented fashion rather than according to the degree of intelligence he formerly displayed. The attitudinal and emotional disorders that accompany paresis will be discussed in a later chapter. Our interest here is in the paretic's intellectual deterioration.

110. Attempts to diagnose mental disorder from intelligence test findings. So far we have considered various disorders that have as one of their distinguishing characteristics some intellectual defect. Another question now demands our attention. Are there certain kinds of intellectual disorder that always accompany certain maladjustments, and is this accompaniment constant enough to warrant using the intellectual disorder as a diagnostic criterion? We shall devote the next few paragraphs to answering this question. The studies most pertinent to it have been grouped under the headings of *scatter* or *pattern analysis*. As one author has stated the matter (Rabin, 62, p. 413), "Intelligence testing has for some years entered a new phase of development. The psychologists are no longer satisfied with the diagnostic value of the *total score*, I.Q. or other quantitative results alone. Nor are they merely satisfied in diagnosing mental defect. They have developed a special interest in finding common factors in certain clinical groups that will distinguish them from others. Such distinguishing factors may give rise to the hope of shedding further light upon the psychological processes concomitant with various social, emotional and physical maladjustments." Psychologists thus feel that intelligence is not a

unitary ability or capacity but is composed of several functional unities. The normal individual will score at approximately the same level in each, while the person showing personality or behavior disorders will score at different levels in the various capacities comprising "general intelligence." Because it is an age scale, the old stand-by in intelligence testing, the Stanford-Binet, is not as well suited to studies of scatter and pattern analysis as a point scale such as the Wechsler-Bellevue. For this reason most recent studies have used the Wechsler-Bellevue scale in the measurement of intelligence.

1. *Pseudo-dementia*. One can judge the intelligence of a person only from the way in which he responds to external situations. When he fails to respond "intelligently," the observer is led to believe that there is a lack of intellectual capacity. This may be a fallacious conclusion. The subjects may have the capacity to respond intelligently but be prevented from so doing because of some other condition. Bijou (12) proposes that such subjects will score high on some subtests of an intelligence scale and low on others. Thus his scores are *scattered* as to achievement level. The real level of ability of such persons is indicated by their high scores. In line with this opinion is a study by Gilliland, Wittman, and Goldman (34) which controlled emotional condition and attitude and found no significant patterns among psychotics. As a matter of fact extremely withdrawn people, those with an excessive introvertive tendency, frequently show up poorly on intelligence tests, although there may be no real loss of capacity at all. This is indicated by their doing better at times when they are not so withdrawn and by their high scores in some subtests. These persons seem stupid because they are living their lives within themselves and simply do not care to carry on intercourse with the outside world. Another group who might be misjudged are those with some sense deprivation. A person cannot respond adequately if he lacks the proper receiving apparatus. Our schools put great emphasis on both hearing and vision, and the child who is deficient in either is under a real handicap. Especially is this true if the defect is not severe enough to be readily recognized so that

the child may easily be mistaken as intellectually dull. This is much more likely to occur with hearing than with vision because it is harder to make an accurate examination of the hearing of very young children than it is to measure their visual acuity. The most pronounced symptom of a slight hearing loss is what appears to be inattention. When tested, the child seems to respond but as soon as the general classwork is resumed, he slumps into indifference. The reason for this apparent incongruity is that, when keenly attentive (which he is when tested), he can interpret what is said from other than auditory cues, such as lip reading, movements of the hands, facial expression, etc. Accurate audiometers (instruments that measure auditory acuity) are now to be had so that auditory acuity may be measured more easily and accurately.

2. *Intellectual characteristics of abnormal groups.* Abnormal persons differ from normals in the extent to which they make expected responses on intelligence tests. Since the advent of the Wechsler-Bellevue scale, new effort has been directed toward the search for consistent differences. Some of the results have been positive. Schizophrenics seem to score better on the verbal portion of the scale than on the performance, and psychopathic personalities make a better record on the performance than on the verbal. Most investigators seem to think that variance in achievement from one subtest to another is a mark of a pathological condition, although in many studies age, attitude, cooperation and emotional state have not been well controlled. Such diagnostic groupings as have been mentioned apply to groups only, at present; they are not reliable enough for individual application. Neither should it be thought that the use of pattern analysis of intelligence tests will ever become a short cut to thorough clinical diagnosis (Wallin and Hultsch, 83a).

XXIII. MENTAL DETERIORATION AND SUPERIORITY

Some people show a decline in the efficiency of mental functioning. They are no longer able to perform tasks they once did. They forget easily, think sluggishly, and many times present a pitiful picture of attempting more than they can accomplish. In some cases such a loss

of function seems to be a real drop in capacity, while in others it may be temporary. In both cases, the clinical picture is one of a person not operating at the mental level he once attained.

111. Senile dementia. It is well known that the tested intelligence of persons over sixty years of age is lower than that of younger age groups. Various reasons have been advanced for this decline, including a general physiological slowing up, routinizing of habits, lack of contact with the need for speed in new learning, etc. "You can't teach an old dog new tricks" may not be an accurate statement, but it has been established that older people are under the greatest handicap in learning tasks that conflict with their established habit patterns. (Berrien, 10) These changes in intellectual efficiency occur with sufficient regularity to be considered the normal course of events.

There are old persons, however, who show such radical changes in intelligent behavior that they must be classed as abnormal. Their disorder is called senile dementia, and an organic change, characterized by a marked atrophy of the brain, is associated with the mental deterioration. The symptoms of senile dementia probably are not due so much to this atrophy as to the attempt to compensate for it. Senile dementia seldom appears before the age of sixty and shows as its most characteristic clinical sign an impairment of memory. This occurs at first in remembering recent events but soon progresses until there is an alteration in memory for remote events as well. Orientation in time is disturbed, and eventually the patient is thoroughly confused in all mental functions requiring memory. A real deterioration, associated with brain atrophy, has taken place. In addition to the mental symptoms, senile dementia patients also show changes in attitude in the direction of apathy, indifference to social conventions, and narrowing of interests. Physically they may become weak and flabby and shaky and lose control of the bladder and bowels. Practically nothing is known of the origin of the disorder, and it nearly always is fatal in about five years from onset. (Rosanoff, 64)

112. Deterioration in the psychoses. Many mental patients seem to do more poorly on mental tests than might have been expected from the kinds of lives they have lived prior to the

onset of their disorder. Particularly is this true of schizophrenics. Babcock (5) has devised a test designed to show the amount of this deterioration. It is based on the interesting assumption that ability to perceive and learn something new is what is lost in cases of deterioration rather than associations of long standing. She thus gives patients a vocabulary test to determine the level of mental functioning in terms of old associations and an efficiency test for new data. The normal patient will score at the same level on both, while the deteriorated person will show a low efficiency score when compared with his vocabulary level. It is well known that schizophrenics show deterioration when examined by such a test as the Babcock. What the nature of the deterioration is, however, is not positively known. There are those who attribute it to a change in real capacity, probably associated with organic pathology. It is more likely that it is a reflection of certain psychological factors, such as apathy, inattention, lack of cooperation, inability to make decisions, etc. These factors may have either a psychological or a physiological basis. (Wittman, 90) Specifically, schizophrenics show up well in tests of information and vocabulary and poorly in tests of digit-symbol substitution, picture arrangement, and picture completion. (Magaret, 48) They are usually much inferior to seniles in their use of language as communication, which requires an ability quite different from that involved in information and vocabulary tests. (Cameron, 19)

Deterioration is also found in a marked degree in paresis, a description of which appeared in paragraph 109, 2, and to a lesser degree in other psychoses such as manic-depressive. An excellent work on deterioration is the one by Hunt and Cofer (40).

113. **Supernormal intelligence.** From a clinical point of view the person of superior intelligence is not often extremely peculiar and for that reason has received little attention from students of abnormal psychology. We are beginning to learn that the superior child needs almost as much special care as does the inferior child. If the superior child is not recognized for what he is, he often fails to fit into the usual school and social molds and becomes a misfit.

An illustration of a person of exceedingly superior intelli-

gence, who also made good use of it in later life, is Francis Galton (Woodrow, 91, pp. 9-11):

The day before his fifth birthday, Francis Galton wrote the following letter to his sister:

My Dear Adele:

I am 4 years old and I can read any English book. I can say all the Latin Substantives and Adjectives and active verbs besides 52 lines of Latin poetry. I can cast up any sum in addition and can multiply by 2, 3, 4, 5, 6, 7, 8, (9), 10, (11).

I can also say the pence table. I read French a little and I know the clock.

Francis Galton,

February 15, 1827.

The only misspelling is in the word February. The numbers 9 and 11 are bracketed because one had been scratched out with a knife, and the other was covered by a bit of paper pasted over it.

By the age of six, Galton was conversant with the Iliad and the Odyssey. At six and seven, he busied himself with collecting insects and minerals, which he is said to have classified and studied in more than a childish fashion.

Notwithstanding his wonderful precociousness, this noted English scientist accomplished his best work at an advanced age. *Hereditary Genius* was published in his fiftieth year; *Natural Inheritance* in his sixty-eighth.

The fact that Francis Galton, the boy genius, developed into the adult scientist is due largely to the wisdom of his teachers. We tend to assume that a bright boy will always remain bright regardless of the type of training he receives, but the falsity of this assumption is evidenced from the fact that many a bright child has been ruined by unwise teaching.

One error has been to assume that all bright children should be accelerated in school. In some instances this may be desirable when the child has or can gain the social maturity to go with his advanced grade. Otherwise, other children may ridicule and shun him with the result that he may become a child misanthrope or may turn against learning to win back social favors.

Another error is the attempt of the teacher to make the brilliant child conform to classroom discipline. His precocity is misinterpreted as mischievousness and he is punished. He then puts his brains to work to outwit the teacher who has abused him, and usually succeeds in this, with the result that

a bitter conflict ensues, which ends in the total discomfiture of the teacher and the disgust of the child for school. The same may be said for the parents and the home. A superior child, like other children, needs to learn self-control and respect for respect-commanding authority, but not discipline for discipline's sake.

The general opinion among experts is that the bright child should not be accelerated too fast nor too far. He should be taught to make social adjustments, and his superior intelligence should be given an outlet in activities of a higher order which may be substituted for the regular school curriculum of his normal grade, whether this be through an enriched curriculum or special classes.

XXIV. TREATMENT OF THE FEEBLE-MINDED

Thirty years ago the problem of the feeble-minded was not considered very pressing. Today it is presented to us in various forms and in such a manner as to be almost terrifying. One sociologist has gone so far as to predict that in a very few generations we shall be a race of morons. Can it be that in a quarter of a century we have deteriorated so rapidly? Are we just awakening to a menace that has existed for a long time? Or, are we being misled by these alarmists? We believe that the last question should be answered in the affirmative. Since the work of the psychologists has furnished the fuel for these extreme statements, we should understand just what is involved in the study and classification of human beings according to intelligence.

114. **The causes of feeble-mindedness.** Intelligence is a variable which depends upon a great many factors. The growing embryo may be arrested in development because of the advanced age or ill health of the mother; the embryo may suffer direct damage before birth; it may become infected with syphilis or some other disease. The child may be injured at birth in such a manner as to suffer destruction of cerebral tissue; he may be the victim of cerebral meningitis or some other form of cerebral disorder; he may suffer from thyroid deficiency, pituitary dystrophy, or some endocrine disturbance; he may be deprived of normal sensory acuity; or he may suffer personality damage which interferes with his normal intellectual development. In addition to these factors there are no doubt innumerable unidentified elements that cause variations in intelligence.

In view of these facts, it is useless to search for any single cause for feeble-mindedness, and consequently, treatment can never be in the nature of a simple or a single remedy. Common sense would suggest that, in cases of marked deficiency, the activating causes should be sought and, so far as possible, modified or eliminated. If no modifiable factor is located, work should be directed toward fitting the individual into the social order as effectively as possible.

115. Feeble-mindedness and delinquency. There are a number of studies leading to the conclusion that there is a close relationship between mental deficiency and criminality.¹ The evidence in all these studies is about the same. The inmates of prisons, reformatories, those indicted for crime, delinquents, and similar groups are given intelligence tests. The percentage of feeble-minded persons in such groups is found to range from about 40 per cent to 60 per cent of the whole group. The natural conclusion from such studies is presented by most of these investigators with great fervor. Eliminate the feeble-minded and you have cut the number of delinquents in half. How simple! What a saving of economic wealth, what a saving of human life and how much happiness could be added to life if we would just face this problem and rid ourselves of the feeble-minded!

Recent investigation has taken most of the support from these statements. We have found that 40 per cent of the general population are feeble-minded when measured by the same standards that were used in the studies of criminal groups. Studies of the mentality of the inmates of such institutions as those in Whittier, California, and Eldora, Iowa, have shown the median I.Q. to be 82. This is about the same as that of the ordinary population as measured by the army tests. Zeleny (93) has taken another approach by figuring the percentage of feeble-minded in criminal and non-criminal populations. He finds only a very slightly higher percentage of feeble-minded persons among criminals.

When we consider that the clever criminal is likely to be able to keep out of prisons and reformatories, it is quite likely, in fact very probable, that the intelligence of all criminals,

¹ For a review of these studies, see S. P. Davies, *Social Control of the Feeble-minded*, *National Committee for Mental Hygiene*, 1923, pp. 46-57.

both those in institutions and those out of them, would correspond to the distribution of intelligence of the average moral and social individual. (Berrien, 10)

Delinquency or criminality depends upon a combination of traits. In some instances mental deficiency may play a part, but in others mental superiority may be just as important a factor. One cannot blame all failures in social adjustment, nor even 50 per cent of them, upon low intelligence. One may teach a dog to become a non-delinquent animal, although, measured upon any performance scale, his I.Q. would be in the idiot range. We can teach the feeble-minded morality; but by the elimination of feeble-mindedness we cannot eradicate delinquency.

116. **Inheritance of intelligence.** When any biological trait shows variations that follow approximately the normal curve of distribution, it seems fair to assume that some of the innumerable factors that produce such variability come through the mechanism of inheritance. Why not, then, inaugurate a program of eugenics to eliminate feeble-mindedness?

If intelligence depended upon a single inheritance factor, such a eugenics program might be feasible. But it would not even be easy to produce a race of brown-eyed or tall persons, because height and eye color—although simpler than intelligence and dependent upon hereditary factors in part—cannot be traced to any particular determiners. Intelligence, depending upon many more factors than does height or eye color, offers incalculably more difficulty to the geneticist. All that can be done is to prevent the reproduction of individuals who have a very low degree of intelligence, but this will never solve the problem of intellectual variation and we shall still have a wide range of intelligence in spite of such control of reproduction.

With our present knowledge of heredity we can no more produce a race of geniuses by eugenics than we can produce a race of giants. We are forced to recognize that we shall always have variation in intelligence, and the practical problem is not how to get rid of the person of deficient intelligence, but how to fit him into the social order. The problem of intellectual variation resolves itself into one of educating persons of each level of intellectual ability so that they can

make the most of the ability they do possess. That the possibilities here are greater than was once supposed has been amply demonstrated by the so-called "Iowa studies" on the constancy of the I.Q. While this text is not the place for taking sides in the controversy regarding the constancy of the I.Q., it should be made clear that every possible opportunity should be provided for the intellectual development of our feeble-minded population, especially if the defect is not too severe. (Wellman, 87; Stoddard, 76)

117. **Education of the mentally deficient.** Before we had compulsory education the dull child dropped out of school early or else never began at all. Now we are forcing a large number of children to attend school who find it difficult if not impossible to do the work of the regular curriculum. The first cry was to put all these into special institutions for the feeble-minded. Since this is impossible because of the large numbers involved, special classes have been organized in the public schools.

The first method adopted in these special classes was to give the dull children extra drill so as to make them come up to grade, if possible. If they could not be brought up to their grade, they were taught the portions of the regular curriculum that they could grasp.

The "opportunity" class (as such special classes are called) is now designed to teach the child the things that he can learn and that will best prepare him to take his, and not another's, place in the social and economic world. Included in such a program are training in cleanliness, vocational and industrial training, gardening, and some academic work and speech training, the amount of the last two depending upon the child's capacity.

Since a large part of the dull or feeble-minded child's training should be to fit him into the social order, he must learn to control impulses that would make him a menace. Too often the dull child is permitted to acquire pernicious attitudes or habits that are difficult to unlearn at a later date. What seems to be a lack of inhibition is oftentimes the result of early injudicious education. A statement by Dr. Fernald concerning the learning ability of dull children is in point:

It is just as difficult for the feeble-minded to unlearn as it is for them to learn in the first place. If both learning and unlearning, then, are more difficult processes for the subnormal, than the normal, it is the more important that the subnormal child should be placed under the right kind of instruction as soon as the learning process begins. This involves first of all the pre-school years, a most important period in the child's development and perhaps doubly so with the defective child. It is in this period that mental defects usually become manifest. It is in this period also that many of the undesirable physical and personal habits to which defectives are prone, reveal themselves and may be most easily corrected. Here is an important field of opportunity for rendering the most effective kind of help to the subnormal child. (Davies, 24, pp. 172-173)

Instead of passing the blame to the defective person when we find that he is non-social, we are beginning to realize that the fault lies with those who control his training. They, being more intelligent, should have an adequate conception of his psychology and should understand how he must be taught and provide such opportunities as he needs.

The feeble-minded, especially until they reach manhood and womanhood, are notably impressionable and easily influenced. That is why they so characteristically fail in a poor environment and cause little or no trouble in a good environment. In short, the feeble-minded quite truly reflect in their behavior the kind of environment in which they find themselves. In that way they are an index of social conditions. If the community finds large numbers of delinquent, socially menacing feeble-minded in its midst, let it look at itself and ask: "What kind of community have we here, what kinds of neighborhoods, of homes, of recreation?" The trouble must be sought somewhere behind the feeble-minded. The feeble-minded may be perpetrators but rarely instigators . . . They are frequently the dupes of more clever wrong-doers of higher mentality who can cover up their own actions and leave the feeble-minded to be caught.

How commonly has the attitude of the community toward the feeble-minded been one of social ostracism! Those who by reason of delinquency have come to public notice have been wont to be regarded as hopelessly bad characters. "Get rid of them; keep them out of our midst," was the natural social reaction. The result of this tendency on the part of society to cast off the feeble-minded was simply to foster in them those antisocial proclivities with which they have been charged. To know the feeble-minded and their impressionable nature, is to realize what the effect upon them of such a social attitude is. This policy of ostracism, far from solving the problem of mental deficiency, only tended to aggravate it. (Davies, 24, pp. 195-196)

118. Present status of the feeble-minded problem. Since we have passed the first rude shock of awakening to the fact

that people differ in intelligence, we have been able to view the feeble-minded as a scientific problem rather than a problem in reform. The present views may be summarized as follows:

1. It is clearly recognized that feeble-mindedness may be the result of various causes. A rational disposition of any one case must be based on a scientific study of the individual and not upon any unwarranted assumptions based on prejudice.

2. The feeble-minded individual requires a different type of education from the normal. He cannot be taught some of the things that a normal or superior person can learn, but he can be taught some things (unless too inferior) that will enable him to make economic and social adjustments.

3. Social attitudes and morality are learned. The feeble-minded may not learn morality if the same educational methods are used that are effective with the normal person, but with different training he can be taught to be moral in most instances if the training is begun early enough.

4. The feeble-minded cannot compete on equal terms with normal persons but there is a place for him in our economic system if we but face the problem squarely and attempt to adjust our economic system to our knowledge of individual differences in intelligence. When we cease to give the feeble-minded the impression that we think he is a sinner because he is not brilliant, we shall get along better with him. And when the parents of feeble-minded children cease to feel that *they* are sinners, they can be of more help to those children.

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CHAPTER V

DISORDERS OF SENSATION

Human behavior is unified, but its study must be accomplished through detailed analysis. In this chapter we shall begin with an analysis of sensory disorders, keeping in mind the fact that a sensory disorder in itself is not so significant to the student of psychology as the effect of such a disturbance upon the rest of the personality. Most significant are visual, auditory, and cutaneous disorders, and these will therefore be given the greatest consideration. Each sense field will be studied first in reference to possible specific defects; later the influence of these upon the rest of the personality will be considered.

119. **A deaf boy who had perfect ears.** All of us value our senses so highly that it is hard to realize that a person could give up the use of his eyes or his ears without being forced to do so by a direct physical injury to the sense organ. That a mental conflict, a central disturbance of a complex sort, can result in the loss of the use of a sense organ that is organically intact is shown by the following case.

A colored boy, apparently about twelve years of age, was found by the police wandering near one of the south side parks in Chicago. He said that his name was Frank Coleman but was unable to tell where he lived or how he came to the place where he was found. He was taken to the detention home, where prolonged efforts to locate his home were unsuccessful.

One morning, shortly after the beginning of his residence at the detention home, he appeared unable to speak or hear. He made signs indicating that someone had grabbed him by the throat and that as a result he was unable to use his voice. He could not hear what was said to him, but managed to understand a little through signs that were made and through watching the lips of the speaker. His writing was so poor that it offered little help. He understood simple things that were written but his replies were mostly unintelligible.

For four weeks he remained mute, except for two instances when he was heard to utter sounds. One was when he was made to scrub a floor and the other was when he wanted a cigarette. That his deafness was not absolute was shown by the fact that he winked whenever a loud sound was made behind him. He also showed signs of sorrow when his mother was mentioned by a person whom he could not see.

At first an attempt was made to force him to speak by frightening him

with an electric current that was harmless but decidedly unpleasant. All such attempts only served to make him more and more sensitive, a condition in which all suggestions or requests met with immediate opposition. Finally, through suggestion and psychotherapy he gradually regained his hearing and ability to talk.

He now gave his real name, informed the authorities that his home was in Birmingham, and that he had run away from the orphanage in that city. This information proved to be correct.

The explanation of this case will be apparent as we study the different forms that sensory disorders take and the way in which our intake of sensory impressions is controlled by our central nervous system. Here is a typical problem calling for a psychological explanation, but such an explanation is only possible when we are familiar with the forms that organic sensory disturbances may take.

This boy's stubborn silence and refusal to talk is but an exaggeration of what every teacher is likely to meet in her ordinary classroom work. His quick recovery indicated that such conditions may be remedied, but it likewise shows that mere force simply strengthens stubbornness. If he expects to cope successfully with such problems, the teacher or parent must discover the motive for resistance, and then deal with that rather than with the stubbornness itself. Illustrations of extreme cases are of value because they throw into relief the type of problem that operates in a lesser degree in mild cases.

XXV. GENERAL FUNCTIONS OF SENSE ORGANS

Sense organs have two general functions: one to keep out unwelcome visitors and the other to transform admitted stimuli to nerve impulses.

120. Limitations of the sensory mechanism. Our sense organs are the gateways to our nervous systems. A gateway is designed to keep out unwelcome guests and this function of our sense organs is evident by the way they will admit only stimuli of a certain sort and range. Our ears are sensitive to physical vibrations within the range of about 16 to 40,000 vibrations per second. Any physical vibrations outside this range cannot be received. Our eyes respond to ether vibrations ranging from 380,000 billions to 770,000 billions per second, and so on for all the senses.

121. Transformation of stimuli into sensations. A second function of the sense organs is to change acceptable stimuli into a form that will enable them to affect our behavior and in this way actually to become a part of our personalities. Sound waves, light waves, heat, contact, and chemical stimuli of taste and odor must all be transformed into a common form of energy, namely, nervous energy, before they can be coordinated. This coordination of all such external impressions, with the resulting effect upon the human being receiving them, leads to the constant transformation of character and personality that we continually experience and that we see modifying the lives of persons around us. No stimulus can be considered in isolation but only in its relation to the total personality. If the sense organs work perfectly, this transformation of the stimulus into nervous energy follows fixed laws; if they are disordered then the stimuli are distorted and the effect upon the personality of the recipient is modified in line with such distortion. If a child sees a blurred page of printing before him, he is not affected in the same way as the child who sees the page very clearly.

In the discussion to follow, we shall divide the various sensory disorders into organic and functional. The organic are those that can be traced directly to some disorder of the sensory mechanism. The functional are those that are due to some errors in adjustment. These are not mutually exclusive, to be sure, but our study will be made clearer by considering them separately.

XXVI. DEFECTS OF THE VISUAL APPARATUS

Our discussion of the defects of the visual apparatus will embrace a study of the defects in the refracting media of the eye, of the defects in the eye muscles, and of other common physical defects of the eye.

122. Disorders of the refracting media. Disorders of the refracting media are familiar to all and offer no serious psychological problem if recognized, because almost all such defects may be remedied by the use of artificial lenses. If such errors are not corrected, serious problems may result. Many a mother and teacher have tried in vain to teach some child to read, and have even gone so far as to consider him feeble-minded because he has not progressed, when the real

trouble has been that he has not been able to see clearly the printed page before him.

Most of us are familiar enough with *myopia*, or nearsightedness, *hyperopia*, or farsightedness, and *astigmatism*, but many people are not aware of the changes that may occur in the visual apparatus with age. This defect is called *presbyopia* and is due to a gradual failure to function of the accommodation apparatus, in which the lens grows increasingly rigid with old age. The lens, instead of adjusting as it should, remains rigid, and unless corrected with a convex or a bifocal lens, the vision becomes indistinct.

If defects of the refracting media are corrected in time, no serious consequences result. Failure to correct them may lead to more serious conditions. Nearsighted and farsighted conditions cause the person to attempt to see well by increased efforts to adjust the accommodation apparatus. The continued strain of such prolonged effort will produce fatigue, headache, and irritation. Some cases of failure to read, so-called nervous fatigue and indigestion, and emotional irritability have markedly improved with a correction of refractive defects. The eyes are our most important distance receptors and imperfect eyes may have a widespread effect on one's personality.

The secondary results from visual effects are often very far-reaching. A girl was brought to our clinic with the report that at one time she was doing very poor work in school, that she had developed an ugly disposition when her teachers tried to help her, and recently had learned to do little mean things to the other girls. She would pull their hair when they were off guard, trip them as they walked by, and seemed to take a vicious delight in any discomfiture that she was able to cause. Examination showed that she was normal in intelligence but that she was a very poor reader. It further indicated that she had a marked visual defect. When this was corrected by proper glasses, the girl began at once to improve in her reading, her disposition and attitude toward her teachers changed, she became more alert and vivacious, and she began to get along better with her playmates.

A child may shuffle his feet because he cannot see clearly. He may mumble his words when he reads, for the same

reason. Certainly, one who has a vague image of what is before him is not likely to be so quick and energetic in his movements as one who sees perfectly. Poor vision is not back of all school problems, but no teacher should be blind to the complex possibilities that might be built upon this source of trouble.

123. Other defects in the visual apparatus. We need not consider visual defects themselves in too great detail, because it is not they but their effect on more strictly psychological functions that is of especial interest to the student of abnormal psychology. There can be disorders of the eye muscles such as *nystagmus*, an oscillation or rapidly alternating movement of the eyeball; and *ophthalmoplegia*, a paralysis of certain eye muscles resulting in blurred vision. Or the muscles may be unbalanced as in *strabismus*, or cross-eyedness. Color blindness in varying degrees is also an organic disturbance affecting a small percentage of people but without many psychological abnormalities. Then, of course, there may be blindness, or amaurosis, with many psychological complications.

XXVII. FUNCTIONAL DEFECTS OF VISION

The visual defects described in the last section can be tested by neurological methods combined with optical tests and can in most cases be traced to a definite organic origin. There are other visual disorders that do not fit in with our knowledge of visual phenomena. They are called functional disorders because there is no apparent lesion of the nervous system or defect in the visual apparatus sufficient to account for the trouble. They are errors of adjustment between the incoming stimuli and the rest of the personality.

124. Functional defects are incongruous. When a patient presents a group of symptoms that do not fit in with the known anatomy or physiology of the visual apparatus, it may be assumed that the defect is functional. In other words, the patient may develop the habit of not being able to see. Since there is no physical defect to remedy, correction must be accomplished by means of a new habit (the habit of seeing) which replaces the old habit (the habit of seeing imperfectly).

The following case illustrates such a defect. A young man of twenty-one years of age, a college student, complained that he could not read because he could see only the upper

half of each line of type. If this were actually possible the victim of such a defect certainly would experience great difficulty in reading easily. This is about what he would see:

Reading should be easy if your eyes are normal

This defect, the young man claimed, had begun in early childhood and had continued without interruption to the present time. He had been forced to depend upon hearing others read to him, first his mother, and then any kind friend who could be persuaded to do so. The effects of this handicap increased as he grew older, and he was now finding it almost impossible to make his grades in college.

What was really wrong with him? Tests with geometrical forms and other non-verbal materials showed very clearly that he could use all portions of his retina except, of course, the blind spot. In spite of the evidence from these examinations, he continued to assert vigorously that he could see only the upper half of a line of print and, consequently, was unable to read it easily.

Fortunately, we were able to trace the growth of this habit of incongruous *hemianopsia*. It began with his unusual dependence upon his mother who read to him a great deal before he was old enough to read for himself. When attempts were made to teach him to read he complained that he could not see, thus playing upon his mother's sympathy so effectively that she read to him. Why should he learn to read when his only visible reward for so doing would be to lose some of his mother's attention to him? He did the easier thing; he remained dependent upon her for his reading. Added to this was his humiliation at the discovery that all his schoolmates far surpassed him in reading ability. He adopted various complaints about his eyes until he finally struck the one we have just described. This was so unusual that it never failed to bring him sympathetic interest.

Here we have an example of a person whose feelings of insecurity were so great that he adopted a rather easy device to assure him of his mother's love and attention; he refused to learn to read. As time passed his device became embarrassing to him. He should be able to read and couldn't. To learn to do so would mean doing things much younger children

did, and he would feel insecure about the results. His "ego" was thoroughly involved now, and he had to find an acceptable reason for not being able to read. He hit upon the reason described above, not conscious that it was false reasoning. The cycle of feeling insecure, drawing others into noticing him through his difficulty, feeling inferior (although slightly martyred) about it, and feeling insecure again continued for so long that the student was really unable to read. He had never practiced reading. Finally the need for reading and the feelings of inferiority at not being able to read became intense enough that he sought psychological help. Under conditions where no humiliation was possible, drill enabled him to remedy his deficiency, and he had no further need for the eye complaint.

125. Functional blindness. Functional blindness is much more rare than are organic defects and, in addition, is much more difficult to detect. Let us review the evidence that tends to indicate that blindness of this class may be due to some personality maladjustment.

1. *The onset of this condition is often of the most unusual sort.* Janet (27) tells of an incident where a man, as the result of a most trivial injury—having a greasy rag strike him on the face—became blind and remained so for four years. In another case, a woman was struck in the face with some soapy water while working in a laundry. Her face was slightly burned but none of the water penetrated her eyes. In spite of this, she became completely blind for two years.

2. *Recovery occurs spontaneously.* The fact that blindness comes under such unusual circumstances would not be convincing evidence that there was no organic lesion (no actual injury to nervous tissue) were it not for the fact that sight returns in just as unusual a manner. It is this type of blindness that lends itself to miraculous cures. The two cases just cited recovered spontaneously.

A cure so effected is not of a definite organic lesion, but of something deeper in the psychological mechanism of the victim. We must understand that seeing is not simply the function of the eye with its nerves to the cortex. It is a function of the whole personality, using the optic nerves and visual apparatus as factors in a complete integration. It is

obvious when one becomes blind with no disturbance of the optic apparatus or its connections, and when the vision returns as abruptly, that one must look to the rest of the personality for the explanation.

3. *The reflexes are normal.* Another bit of evidence that can be used to determine whether blindness happens to be organic or functional is the condition of the reflexes. This is particularly important when we do not have the history of an irrational onset or of previous mysterious recoveries. In true blindness the pupillary light reflexes should be found to be disturbed. In functional blindness they can readily be elicited.

4. *Under certain circumstances vision does function.* Patients with functional blindness have been known to walk in sleepwalking episodes and to avoid obstacles in a manner that would be impossible without the use of sight. The same thing has been noticed when such patients were under extreme emotional stress. Even under ordinary conditions they sometimes give evidence of using their visual powers.

5. *Other factors in the personality indicate difficulty.* Persons who develop functional blindness usually give other clues of a personality disorder. They are suggestible to a high degree or they seem unadjusted to their jobs or they have difficulty in getting along with their families, or they may be considered by others as just queer. This is as one should expect since mental disorders nearly always are the result of an inability to make adjustments to frustrations in a socially acceptable manner. Even in many cases of functional blindness reported in wartime, military life is only the climax to an otherwise unadjusted way of living. McAlpine (36) tells of a nineteen-year-old private who suffered total loss of vision from turning a faulty electric switch. During the process of psychotherapy, the physician found much evidence of hysterical behavior in civilian life. Military life proved too difficult, and the soldier used this pattern of escape.

126. **Functional unilateral blindness.** This is likely to be much more common than complete functional blindness, and it is much more easily proved to be functional than is complete blindness.

One outstanding difference between a real unilateral blindness and a functional blindness is that in the real blindness

the patient is not likely to complain about his trouble and often goes for a long time without knowing that he is blind in one eye, while in a functional type the patient is likely to exaggerate his symptoms and to complain violently. Quite a number of cases have been found where a child was blind in one eye for years without discovering it. In our ordinary life we may be using one eye almost exclusively and may not be conscious that we are doing so. Few of us use the two eyes to the same extent, but we cannot tell, except by a special test, whether this is so. This fact makes the complaints of the person with functional unilateral blindness appear exaggerated.

The way to discover a functional blindness is to demonstrate that under certain circumstances the subject does use the supposedly disabled eye. Of course such a test is warranted only when no organic cause can be discovered for the blindness.

Blindness of this sort is not so common as it once was. At one time functional visual disorders were looked upon as definite evidence of hysteria and physicians would take suspects and examine them in great detail for unilateral blindness as well as some of the other visual disorders that we shall study presently. Such examinations would actually suggest disorders to the patients, and they would forthwith develop them. Physicians today are not making so much of these symptoms as diagnostic criteria and hence fewer cases are found. The significance of functional unilateral blindness will become clearer when we study hysteria.

127. Narrowing of the visual field. One of the most peculiar forms that functional disorders of vision may take is the concentric narrowing of the field of vision. In Figure 6 are shown the areas of the retinae of the two eyes functioning in normal vision. In certain patients the only part of the retina that seems to function when the eyes are tested with a perimeter (illustrated in Figure 7) is the fovea and the area immediately surrounding it.

When the eye is found to be perfect, from a physical and organic standpoint, how can narrowing of the visual field be explained? It has been pointed out that patients who, upon test, have a narrowed field of vision, can run, play ball, and

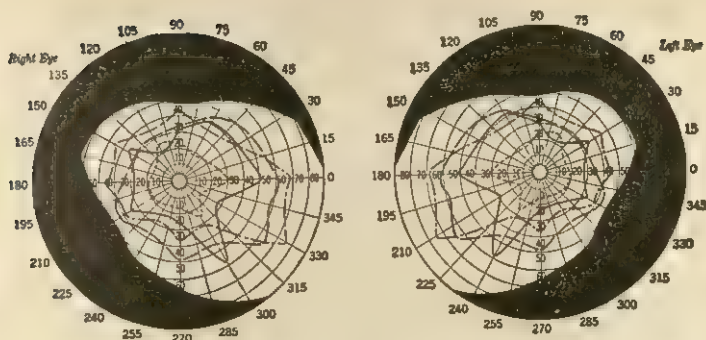


FIG. 6. COLOR ZONES OF THE RETINA

The two spheres represent the retina of the two eyes. The shaded portions do not function. The different fields are indicated by the various boundary lines. In concentric narrowing of the visual field only the extreme central portion functions.

— limits of red zone; — — — — limits of green zone; - - - - limits of blue zone; — — — — limits of yellow zone.

make coordinated movements with their arms, all of which require peripheral vision. These patients do not realize that in so doing they are contradicting the results of the careful tests made with the perimeter. It can be shown in such cases that the subject can and does use the periphery of his retinae under certain circumstances. If tested in the laboratory, when he is convincing others of his deficiency, the peripheral areas do not function. When the use of the peripheral vision becomes of vital importance for his welfare, he does make use of these areas. If the reader doubts the utility

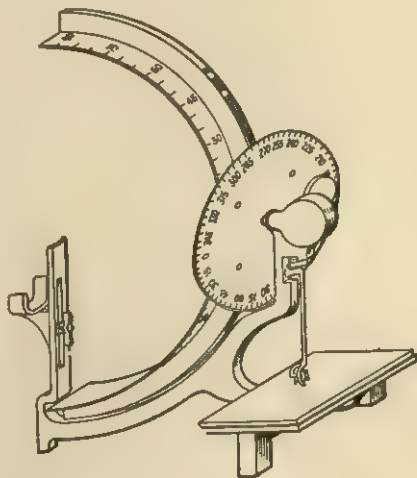


FIG. 7. PERIMETER

The semicircular bar may be placed in any meridian. A given object is then moved along the bar from without in until it is just perceived. The angular distance at which this occurs is marked off on the corresponding meridian on the chart seen at the right of the figure. The eye examined gazes over the top of the vertical rod at the left at a fixed point in the middle of the semicircular bar. (From W. H. Howell, "Physiology," W. B. Saunders Company.)

of peripheral vision in playing ball, let him apply Janet's test. Place in front of the eyes a cardboard pierced with two holes so that you can see through one hole with each eye. This limits vision to the fovea. With this cardboard in front of the eyes, try to catch a ball.

Janet (26, p.198) illustrates this situation with the case of a patient with narrowed visual field who responded to a peripheral stimulus.

A young boy had violent crises of terror caused by a fire, and it was enough to show him a small flame for the fit to begin again. His visual field was reduced to five degrees and he seemed to see absolutely nothing outside of it. I showed that I could provoke his fit by merely making him fix his eyes on the central point of the perimeter and then approaching a lighted match to the eightieth degree."

128. Functional blindness a habit. The various peculiarities of functional vision defects and functional blindness indicate that under certain conditions the defect is inoperative and the blind do see. In other words, the patient has developed the habit of failing to see certain specific things or of limiting his vision in peculiar ways. That functional blindness is not due to alternate intervals of good and poor vision but that the supposedly blind eye (or blind portion of the retina) is functioning all the time, even while there is a failure to see specific stimuli, can also be demonstrated.

Cohen, and his collaborators, Hilgard and Wendt, have made significant contributions to this problem. Let us review one of these experiments which demonstrated the use of the blind area in the establishment of conditioned reactions. Hilgard and Wendt (24) established a conditioned reaction by repeatedly presenting a light to the blind area of the eyes just before a controlled puff of air was directed against the right cornea. The interval between the light and the puff was 400 sigma. While the patient never reported seeing the light, lid closure to the light gradually developed just before the occurrence of the puff of air. The extent of this closure to the light gradually increased until he was closing his eyes completely to a light which he did not report.

After it was perfectly clear that the conditioned responses to the light in the blind area had developed, a series was

given in which the light was presented half the time in the seeing area and half the time in the blind area. The patient was instructed to tap each time that he saw a light. While he never reported seeing a light in the blind area, and invariably reported seeing it in the seeing area, the amplitude of the closure of the eye was the same whether the light was presented to the blind or to the seeing area.

Such experiments demonstrate that in cases of functional blindness the patient does use his blind areas even though he denies seeing with these portions. He has developed the habit of "not seeing," but when some use is made of vision in a manner not incorporated in this habit pattern it can be demonstrated that he does see. Such functional blindness can be understood only when we know why and how he developed this habit.

129. Functional blindness not stubbornness. We may get the idea that functional blindness is merely a form of trickery which the patient consciously adopts to gain some end. Some persons may thus feign such a defect, but there is a fundamental difference between those persons and the true cases of functional blindness we have been discussing. In the latter, the blindness is an unconscious defense mechanism. The patient probably does adopt the symptom to gain some end, but the presumption is that he does not know what this end is and that the habit is one of which he is not aware. All he knows is that he cannot see normally.

If a teacher finds any evidence of functional visual defects she may very well interpret it as due to the child's perversity, and proceed to punish him. Such a procedure only aggravates the difficulty. Functional disorders do have the appearance of being motivated by stubbornness and disobedience, but even such manifestations should be carefully studied before any action is taken and efforts should be directed toward a removal of the cause of the difficulty and not toward the misbehavior. If the child appears not to wish to see, the teacher will not improve his vision by forcing him to hold certain objects, a reader, for example, before his eyes and commanding him to see. She must find out why he does not wish to see, discover some means to make him wish to see, and the difficulty will be at an end.

XXVIII. AUDITORY SENSATIONS

In the auditory realm we find individuals with a decrease in acuity, some with increased acuity and others with numerous types of auditory distortions. We may find persons who cannot hear, although their auditory organs are in perfect condition. Probably the most significant fact that we shall discover in this connection is the widespread effect that a minor hearing defect may have upon the rest of the personality.

130. Decrease in auditory acuity. 1. *Organic deafness.* Deafness, either complete or partial, is usually of a definitely organic nature and has only an indirect relation to abnormal personality.

Disturbance of the auditory mechanism is not so serious as are the defects of the visual apparatus because in modern civilization we use our eyes more than we do our ears. Certain indirect effects of deafness, however, have more serious influences on the development of personality traits. These will be considered presently.

The correction of partial hearing defects has been backward as compared with the correction of visual defects, for two reasons: we have lacked suitable instruments to measure hearing, and the devices used to correct partial deafness have been crude and ineffective. Both of these deficiencies have been practically taken care of by recent inventions. Accurate audiometers have been developed by means of which hearing in all tonal ranges can be measured. Suitable devices have been perfected so that amplifiers to aid defective hearing may be almost as accurately applied as are lenses for defective vision. Radio amplifiers may accentuate tones in any range and the only remaining development that stands in the way is to make such devices popular enough that people will not mind wearing them.

2. *Functional deafness.* There is a type of deafness in which the hearing mechanism is intact but despite this the person does not hear. These cases, just as we found in visual defects of a functional nature, are due to some personal factor and are often very complex.

Where the nature of the trouble is in doubt, the first thing to do is to determine by some means whether or not the person does hear auditory stimuli. This can be done by producing a sudden loud sound (without vibration) near the

ear of the subject in such a manner that he cannot observe the source of the sound. Such a sound will cause a winking reflex or some other involuntary reaction in a normal person. If this reaction occurs, it proves beyond question that the patient has some sense of sound. Other more subtle tests have been devised for checking both functional loss and malingering.

131. Increased auditory acuity. Some persons seem to have increased sensitivity for hearing. They will give a violent response to a mild sound and if subjected to continued noise will become very much disturbed. This is seldom a real hyperacuity.¹ It is usually no more than an attitude of irritation toward certain sounds. Persons so afflicted jump and start at the slightest sound and often shut their ears with cotton.

132. Qualitative changes in audition. These may consist of a continual buzzing in the ears, roaring, or explosive sounds. At times they are the aftereffects of excess stimulation of the ears. Such conditions may prevail during a Fourth of July celebration, loud cannonading, or under the constant din of machinery in a manufacturing plant. These auditory aftereffects will usually subside with changed conditions, although there may also be permanent hearing loss if the person is exposed too continually and is too susceptible. (Rosenblith, 46; Chamberlain, 9) One serious aspect from our point of view is the possibility that the subject may perceive them as originating in the outside world, read meaning into them, and try to explain them. This would be the case if he adds to them, or believes that they are voices from the spirit world or from some other mysterious source. Another serious effect can be the assumption by the individual that he is going deaf, especially when he dislikes his work anyway, and when deafness would provide an easy way out.

133. Personality changes due to hearing deficiency. Difficulties in social adjustment often result, in part, from hearing defects. The afflicted person may not hear correctly what has been said, may make a reply that appears ridiculous and that may cause untimely laughter, or may answer in a manner that makes him appear stupid. If the self-conscious-

¹ The prefix *hyper-* signifies an increase of; hence auditory hyperacuity means unusual sensitivity to sounds.

ness thus engendered makes the deaf person retire from conversation, he soon becomes a misfit, while if he continually asks the speaker to repeat, he becomes a bore. A little consideration for deaf persons, especially in the early years, would eliminate many of these personality hazards. Heider and Heider (23) suggest that much of the peculiar behavior of the adult deaf is actually normal behavior in an abnormal situation. Deaf people mention the social deprivations brought about by their deafness as being much more disconcerting than the deafness itself. They resent being left out of much social life, but even more they resent being left out because others feel they are inferior and not full human beings. "The need of the handicapped for love is tremendous." (Solomon, 50, p. 445)

A still more serious danger that threatens the partially deaf person is the temptation to develop feelings of suspicion toward others. (Solomon, 50) People very commonly mention in the presence of a deaf person things they do not want that person to hear. The afflicted one senses the situation and wonders what it is all about. He tends to feel that the whisperings are of a personal sort. Too often they are. This feeling makes him irritable and suspicious. If, in addition, he find that things are not going to his liking, it is very easy to interpret his misfortunes as due to the intrigues of his friends. Did he not see them whispering about him? He feels that he cannot trust them and as a result grows suspicious and more and more seclusive. In this way deafness may be one causal factor in the development of false ideas of persecution. The significance of these will be discussed when we consider delusions.

The chief ages at which symptoms of personality difficulty are likely to appear are 3-4 years, 6 years, 12-14 years, and early adulthood. (Solomon, 50) By adulthood the person has come to realize that he cannot shake his handicap, and feelings of inferiority may become entrenched and lead to many of the symptoms of depression.

134. Apparent mental deficiency through auditory deprivation. It is very difficult to give an accurate test of auditory acuity to young children, and for this reason many of them have an unrecognized partial hearing defect. Such children

learn to respond to sounds; but, not hearing them distinctly, they make false responses or make them upon cues other than auditory. They watch the lips, movements of the hands of the speaker, and similar signs. Such a child's failure to respond properly is likely to be interpreted as disobedience or intellectual dullness. We realize that if this continues over a period of years the child loses a number of things he should be getting if his condition were understood. When he does hear indistinctly and his wrong response is met with scolding, he tends to be more and more careful (which the observer sees only as increased slowness) about responding at all and this gives more ground for regarding him as dull.

Deaf children are limited in their means of communication, being forced to use the few words they know, pointing, pantomime, and other gestures. They have difficulty in referring to absent objects, dealing with the past and the future, handling abstractions, and expressing such concepts as thinking, knowing, wanting, and the like. (Heider and Heider, 23) Is it any wonder they may be judged inferior in intelligence?

Such difficulties of expression seem to lead to social difficulties also. The deaf child may find it difficult to establish rapport, may not be able to present his ideas, may appear to be bragging through ostentatious and exaggerated presentations, and may appear to be aggressive when he has to make his demands and wishes known in as simple a way as possible and cannot give reasons for his demands. (Heider and Heider, 23) Brunschwig (6) has found that deaf children usually show more signs of maladjustment than normal-hearing children, and teachers commonly feel they are more of a social and emotional problem. It is significant to see the great need for love mentioned above appear again in her study. She found that deaf children always ranked the wish to be smarter and to "have my mother and father love me more" very high in any list of wishes they made. These came even before the wish to hear better.

We should always remember that whatever the problems of the deaf child—intellectual, social, or emotional—they are only variations of the problems met by the hearing child. They are neither different in kind nor unique in quality. This fact seems to be of positive value to the hard-of-hearing child

as he works out his difficulties. He gets a boost in his morale from knowing that other people—those who can hear—have the same kinds of problems even if not for the same reasons. (Welles, 53) Needless to say, surely, the hard-of-hearing child should be encouraged to have a suitable amplifier prescribed if an audiometer test indicates it would be helpful. This would be a first step toward eliminating some of his difficulties and making guidance easier in his others. (Pintner and Gates, 44)

XXIX. CUTANEOUS SENSATIONS

Cutaneous sensibility is the result of combined impressions from a number of sense organs. After a brief study of the disorders of the cutaneous senses that can be traced to organic defects, we shall take up the consideration of functional anesthesia, which has been and still is one of the most baffling problems of modern abnormal psychology.

135. Components of cutaneous sensibility. A careful test of the sensitivity of the skin, subcutaneous tissues, and mucous membranes will show that there are several distinct senses with end organs in the skin. They are touch, warmth, cold, and pain, and perhaps tickle, pressure, and vibration. Exploration shows that these are located in distinct "spots" and that the impressions arising from their stimulation are of a specific nature. For example, a stimulation of a heat spot by any sort of stimulus will give rise to a sensation of heat. With more or less qualification this may be said of the others.

In ordinary experience no such differentiation of the cutaneous sensation is made. We learn the "feel" of various objects and make no analysis of the components of such experiences.

Even attempts to isolate the various components by surgical denervation of various tracts have not made clear the way in which the different cutaneous sensations combine to produce what seems to the normal man to be a unitary sense of "touch."

136. Kinesthetic sensitivity. The kinesthetic sense or the sense of movement and position is probably a combination of the four cutaneous senses just enumerated, together with

those in the muscles, joints, and perhaps the tendons. All these combine in actual experience and give rise to sensations of position and movement.

The loss of the kinesthetic sense results in an inability to feel the impressions that ordinarily enter into the interpretation of position or movement. For example, if the subject had lost the kinesthetic sensitivity of his arm, he would find difficulty in carrying food to his mouth while his eyes were closed.

In some such conditions the motor impulses to the affected member may be intact but the failure to receive sensations during the movement leads to gross errors. An illustration of this is the so-called tabetic gait.¹ In *tabes dorsalis* the dorsal or sensory part of the spinal cord is involved so that the sensory impulses from the legs are lost or distorted. A person afflicted with this disease, which is usually the result of syphilis, has the strength to walk; in fact, it appears as if his muscles were too strong. In taking a step, he kicks out too far and then has to bring his foot back to the proper position on the floor. This is due to the lack of controlling inhibition that naturally results from muscle and skin sensations. To walk at all, the tabetic has to check up on the movement of his legs by watching them or with the help of a cane.

137. **Stereognosis.** The ability to recognize the form and consistency of solid objects placed in the hands is called stereognosis (from the Greek word *stereos*, meaning *solid*, and *gnosis*, meaning *knowing*). Such recognition includes a perception of size, weight, space, and character of the surface of the object. To carry out the test for this successfully, place various articles of diverse character in the subject's hands, such as a key, an inkstand, a lid, a pin, an eraser, a button, a coin, and a pencil. Without seeing them, he must be able to distinguish and describe them. The absence of this ability is known as astereognosis.

Laboratory tests (Sears and Cohen, 49) have demonstrated that astereognosis is not simply a loss of the ability to discriminate between common sense objects, such as knives and

¹ The tabetic gait is the gait that characterizes a person with *tabes dorsalis*, a disease in which the sensory tracts in the dorsal part of the spinal cord are destroyed.

keys or velvet and wood, but involves the deeper and more fundamental physiologic mechanisms that are involved in such discrimination.

XXX. FUNCTIONAL ANESTHESIAS

In functional cutaneous anesthesia (loss of sensitivity) the same general principles hold as in functional deafness and blindness. Some specific characteristics of functional cutaneous anesthesia deserve special consideration. Functional disorders, it will be remembered, are those where function is impaired while the organ is intact.

138. Functional anesthetics conform to popular conceptions of functional units. The ordinary conceptions of cu-

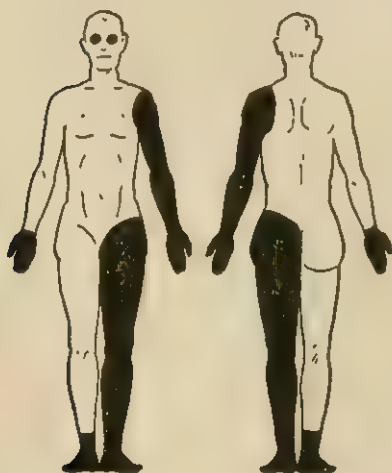


FIG. 8. SOME AREAS OF FUNCTIONAL ANESTHESIAS

The shaded areas indicate some of the areas of the body that become anesthetic in functional units. The nerve supply to any one of these areas is complex and does not correspond to the part affected. If there were actual injury of a nerve or nerves, the affected area would not correspond to the common conception of a leg, foot, arm, hand or eye as illustrated but to the distribution of the nerve or nerves. See

Figure 9.

taneous sensitivity do not at all correspond to the anatomical and physiological findings, and for this reason disorders of these senses due to purely mental causes have been of great interest to psychology. The fact that scientists are not agreed on the precise workings of the cutaneous sensations enables us to understand how easily popular conceptions may fail to conform to the physiology and anatomy of the nervous system.

In experience we do not analyze, we synthesize into functional units. When we grasp a hammer we do not analyze the sensations into muscular strain, heat, cold, pressure, and pain sensations. We combine all these into a unit and naively say we feel the hammer in our hand. The hand is the functional unit. If, with our eyes closed, we cannot distinguish a pencil from a knife, or a dime from a strawberry, it would appear

to us to be an anesthesia of the hand and not of any certain nerve or combination of them.

Several nerves supply the cutaneous impressions for the hand or the foot. If all these were impaired, the lack of sensitivity would extend up the leg or the arm and follow the anatomical distribution of the nerve. In functional anesthesia this does not appear to be the case. The anesthesia stops abruptly where the hand stops, namely, at the wrist, or where the foot stops, at the ankle. Consequently, functional anesthetics have been given the name of the unit they represent, such as a glove anesthesia or shoe anesthesia.

Figure 8 shows the types of anesthetics that do not correspond to the anatomical distribution of the nerves. The patient loses sensibility in his foot, leg, hand, arm, or eyes, as the case may be. The incompatibility of such a disorder with the anatomical distribu-

tion is illustrated by Figure 9, where the areas supplied by the various nerves to the right hand are outlined.

From a physiological point of view it is impossible to account for a disorder of this sort. The explanation must be found in some sort of psychological mechanism.

139. **Functional anesthetics may be induced by suggestion.** Charcot held that cutaneous anesthesia was one of the distinguishing characteristics of hysteria (a psychoneurosis). As a result, most physicians who suspected their patients of having hysteria examined them very closely for anesthetic spots or regions. They usually found them. But one of the characteristics of the anesthesia was supposed to be that it

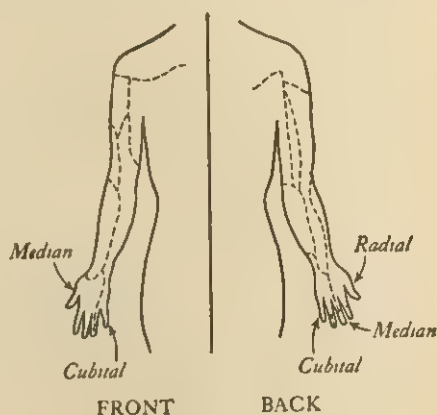


FIG. 9. DISTRIBUTION OF NERVES TO HAND

The areas supplied by the three nerves to the hand, the median, radial and cubital, are very irregular. If any of these were injured the area of disturbance should correspond to the areas supplied. It would be impossible to have an area corresponding to the "hand" as shown in Figure 8 from an actual injury of these nerves.

was not recognized spontaneously by the patient, and a second was that it did not cause the patient any real inconvenience. Later investigators discovered that such patients usually had no anesthesia at all until it was suggested to them by the physician, so of course they never noticed them nor were inconvenienced by them! The physician is not the only source of suggestion for functional anesthetics. They may arise from the suggestion of other persons, accidents, or really almost any source at all that fits the person's needs at the moment.

140. A third characteristic of functional anesthetics is that they shift in position and vary in form. If one has an anesthesia of one hand due to an organic lesion, it is not likely that in a few moments such an anesthesia will shift to the other hand, to the foot, or to some other part of the body. Nor will it disappear entirely for a time only to recur upon occasion. And yet this shifting is quite characteristic of a functional anesthesia.

The conditions under which a functional anesthesia will change in form or location are very numerous. We shall cite a few important ones.

1. *Hysterical episodes will modify it.* In some cases the extent of the anesthesia will increase before the episode; in others it will disappear. During an attack the anesthesia will become different: sometimes it disappears entirely only to return after the episode has passed.

2. *It may disappear during natural sleep.*

3. *Certain drugs may affect it.* Sometimes a patient having a widespread anesthesia will regain total sensitivity while drunk. A dose of chloroform may cause the anesthesia to vanish. Similar results have been produced by morphine, *cannabis indica* (hashish), and other drugs.

4. *Suggestion in any form may modify it.* The application of electricity, metal plates, the laying on of hands, and any such things as may appeal to the imagination of the patient may serve to change the location of the anesthesia or cause it to disappear entirely.

XXXI. OTHER SENSORY FIELDS

Olfactory, gustatory, and organic sensations may be disturbed because of some physical disorder or because of some mental maladjustment. In each case it is essential to make a thorough study of the nature of the complaint. If it seems to be organic, the subject should be examined by a competent physician. If such an examination indicates a normal physical condition, the examiner should search for some functional factor that might account for the complaint.

141. **Olfactory sensations.** The loss of the ability to smell is not very disturbing to the ordinary individual. When it does occur in connection with mental disorders, it is likely to be centrally determined. The individual fails to appreciate odors of a certain sort, not because of an organic defect, but because of an emotional antipathy for the odor or for something that the odor represents. Testing the ability to smell various odors may consequently throw some light on disorders other than strictly sensory ones. Increased sensitivity to certain odors may have similar significance.

142. **Gustatory sensations.** Still less important in connection with mental disorders are gustatory sensations. What appears as a gustatory difficulty is usually an emotional reaction to some specific kind of food or to food in general. If a person does lack gustatory impression he usually says little about it. If he is hyperacute, that is, oversensitive, in this respect, he becomes critical about his foods. But what is usually observed in connection with either carelessness or fastidiousness in eating is due, not to taste sensations, but to emotional attitudes.

143. **Organic sensations.** Mental patients often complain of a great variety of queer sensations originating in all parts of their bodies and give very strange descriptions of them. It is usually found that these are not sensations in any real sense but are referred to the part designated because of some other disturbance of the mental processes. The various disturbances that really occur in organic sensations, if we exclude these referred sensations, are usually the result of certain definite diseases that have little relation to mental disturbances. What the student must do in connection with the various queer pains and aches and bizarre sensations that may be described by a patient is to search for the cause in some phase

of the mental life of the individual. This should be preceded, however, by a critical physical examination to eliminate the possibility of disease.

XXXII. GENERAL CONSIDERATIONS

144. Some important considerations. Our study of sensation disorders illustrates several considerations that should be clearly recognized and kept in mind throughout. The emphasis upon, and application of, these considerations to the various problems will render the whole subject matter much clearer.

1. *The cause of a disturbance cannot be inferred directly from a study of the symptom alone.* The other phases of the individual's personality must be understood before we can know the whole meaning of the symptom.

2. *A simple disorder, such as that of a simple sensory disturbance, has lines of influence extending to different aspects of the individual.* For example, the obvious effect of a visual defect is that the person cannot see perfectly. Failure to see correctly will influence and change one's perception or interpretation of what he does see. Misinterpretation may affect his emotional life and may lead to a profound disturbance in this field. He may develop a queer facial expression in his attempt to see, and this in turn affects his social relations—people may avoid him because of his appearance. A partial failure in vision may interfere with his intellectual development, and he may appear non-intelligent as a result. Such chains of connection might be built up indefinitely. Let us continually keep in mind that, while we are studying little fragments of the mental life in isolation, the influences of these sections are far-reaching.

3. *Obvious and easily corrected defects should be corrected first.* If a person has a visual defect that can easily be remedied by lenses, this should be done by all means, although he may have some glaring and serious defect whose relation to vision is not apparent. Sometimes there is a relation though it is not easily seen. Such a simple procedure is not the end, however. We must study the individual as a living whole, and treatment should be directed toward help-

ing him to be a complete person. Keeping this last consideration in mind, we shall find ourselves treating the man and not the symptom.

145. **Educational significance of sensory disorders.** Sensory disturbances, even those of a minor sort, may have a profound effect upon the personality of the one suffering from them. The teacher should be continually on the look-out for such a possibility when she meets with any peculiarity in a child. This scarcely means that she should be an expert in the examination or correction of sensory defects, but she should know enough about them to enable her to refer any case that appears to the proper expert for careful examination. There really is no excuse for a child to go for years with a handicap that might be corrected, yet it has been found that this is often the case. The teacher should also remember that, even where physical examination proves that no defect exists, the child may have a functional defect that must be corrected by educational methods rather than by medical treatment. This offers the alert teacher an opportunity to render service of inestimable value.

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CHAPTER VI

DISORDERS OF PERCEPTION

Perceptions are interpreted sensory experiences. Since subjective factors play a large role in such interpretation, great variations are found in individual perceptions and no sharp line can be drawn between a normal and an abnormal perception. We shall study the processes involved in normal perception and shall follow this with an analysis of the ways in which interpretations become distorted as well as the reasons for such distortion. We shall find that the grossest distortions are merely exaggerations of the types of interpretation that are found in normal perceptions.

146. Illustration of disordered perception.

In regard to the voice I hear talking to me all the time, it was through my investigating spiritualism and watching and listening for what I could hear in the evenings after reading the newspaper that it commenced. One evening it began to talk to me, telling me some fancy stories, and it kept that up for a week, when one Saturday evening it hypnotized me as I sat in my chair, and I went to bed that night and was in bed until Monday, hypnotized, I supposed, for I was seeing pictures of all kinds all the time until I got up to go to work Monday morning. He has been talking to me ever since. He says he is the devil from hell and he is going to take me to hell as soon as he gets ready. He makes me speak words as if he has my tongue in his control when he is talking to me; but if I talk to any person, I have control. He makes me smell different things and he will tell me about it at the same time. It feels as if there is a flea or bug on my eye, nose, or throat, or any place, and he will say to me, "Brush that bug off." He bothers my eyes, so that I cannot see right at times, and he bothers my stomach at night, saying, "I'll fix your stomach for you so you cannot eat." Three weeks ago, he shook my brain like you would a handkerchief, saying to me, "See what I am doing to you, I'll fix this block of yours." He talks to me all day and night, waking me at night to tell me what he made me dream. He makes my head hurt in the back and it feels hot, and he says it will be worse later on with me. "John," he says, "you never will have another minute's peace as long as you live, and when you die it will be worse. I came here to worry you and I am going to play with you, like a cat does with a mouse, and when I get tired of you, I am going to kill you. That is, I am going to make you kill yourself, but I am going to make you kill someone first." (Mayer, 28, pp. 265-266)

XXXIII. NORMAL PERCEPTION

Our mental life involves a stream or sequence of perceptions. If these are largely in line with the stimuli giving rise to them, are balanced and consistent, we are normal in this respect. If they deviate from usual or logical interpretations, our outlook becomes warped and twisted. Abnormal perceptions can be understood only when we know the way in which normal perceptions operate. Consequently, it is essential that we first get a clear conception of the nature of the normal perceptual process.

147. Perceptions are learned. Perception is the name given to the process of giving meaning to the sensations we are receiving continuously from the various sense organs. An infant may be bombarded by exactly the same lights, sounds, and odors as an adult, but he certainly cannot give to these sensations the meanings that the adult has learned to give them. His response is primarily to the intensity with which the total mass of impressions affects him rather than the specific elements that determine the reactions of the adult. Moreover, his responses are essentially mass reactions of a random nature because he has not learned to make specific reactions to particular elements in the sensations he is experiencing. Learning takes place rapidly, and he soon is able to distinguish his mother's voice from other sounds, to discriminate differences in the tones she uses, to respond differently to an angry reproach, to a soothing lullaby, or to a cry of fear. His bottle comes to have a different significance for him from the teddy bear with which he plays; the side of his crib is something to climb upon, the toy to shake so that it will rattle, the ball to throw, and the scooter to ride upon.

As this learning progresses, the child makes finer and finer discriminations between parts of his environment, is more and more selective in the reactions he makes to them, until he gives immediate significance to much of his environment. He learns to distinguish the meaning of words, to understand the different uses of various objects he can manipulate, to discriminate between friends and enemies, and even to attach esthetic values to music, pictures, and landscapes.

148. Individual differences in perception. If we all experienced the same situations throughout our lives and

reacted to all of them in exactly the same manner, we would learn to have identical perceptions, we would all see our world in the same way. Such identity of experiences does not exist, however, and this variation in individual experience and response furnishes the groundwork for perceptual differences.

While our own experiences tend to make us interpret our sensations in terms of their meaning to us, we have a constant safeguard against too personal interpretations, namely, our observation of the reactions of others to similar situations. This social check serves to restrain us from becoming too individualistic. If, for example, I hate cats and all other persons around me love cats, I certainly would hesitate to say (because *I* hate them) that hate is the only justifiable attitude to take toward cats and that all those who love cats are in error. Because of my individual experiences I have a right to my own perceptual interpretations but, at the same time, when I recognize the fact that the experiences of others have been different from my own, I must admit that everyone else has a right to his interpretation.

We allow our fellows a wide range of possible interpretations before we regard them as queer. A sound to me may indicate a burglar; to my comrade, a mouse. These differences are normal. If a third person, however, insists against all evidence to the contrary that this same sound is produced by Satan in an effort to shatter his nerves and drive him to suicide as a punishment for winking at a strange girl twenty years ago, we can hardly say that such an extreme variation in interpretation is normal. In other words, when one's interpretation is extremely unusual, tenaciously held, and clearly not in line with those of others in the same situation, it may be taken as evidence of abnormality.

149. Illusions. An illusion is an inexact or inaccurate perception of an actual sense impression. Illusions are experienced by all individuals and hence cannot be considered abnormal. But they are errors of perception, the commonest ones perhaps. Perceptual errors cover the entire range from illusions to those that are extremely rare and individualistic. These we call hallucinations. There is no sharp line of demarcation between illusions and hallucinations, and a larger proportion

of perceptual errors partake of the characteristics both of illusions and hallucinations than are found at either extreme.

The following schematic outline indicates the principal characteristics of erroneous sense perceptions in their three stages: illusions, simple normal hallucinations, and abnormal hallucinations.

	<i>Illusions</i>	<i>Simple Hallucinations</i>	<i>Abnormal Hallucinations</i>
<i>Incidence</i>	Common to all persons	Uncommon	Rare
<i>Interpretation dependent upon</i>	Objective stimulus	Objective stimulus and individual factors	Subjective factors almost exclusively
<i>Emotional interest in the experience on the part of the subject</i>	Amusement	Slight or fleeting personal interest	Strong and persistent personal interest
<i>Attitude of subject</i>	Believes in objective facts	Bewildered	Believes in hallucination
<i>Subject's insight</i>	Complete understanding	Partial	None

XXXIV. SYNESTHESIA

When a sensation is interpreted immediately in terms of a sensation from a sense organ different from the one stimulated, this perceptual process is called synesthesia. The most common form of synesthesia is colored hearing. A tone gives rise to a clear and vivid color. It does not remind the subject of a color, it is not like a color, but actually is perceived as a color.

150. Combination of different senses in perception. Rarely, if ever, does one sense field act independently of the others. The range of such cooperation between the senses is quite wide, some being so intimately associated that they are seldom separated in actual experience, while others show relative freedom from the influences of other specific senses.

Normal, intimate association between sense modes is probably best illustrated by the tactile sensations. So intimately integrated are they that, until laboratory experiments isolated them, we were supposed to have but one tactile sense,

the sense of touch. In ordinary experience we seldom differentiate the component sensations of heat, cold, pain, and light touch; we experience the "feel" of an object and make no differentiation between the contributing sensations. When a knife is placed in our hands we recognize it, but would be at a loss to analyze the sensory components of such an interpretation. Another illustration is the cooperation of taste with smell. With the olfactory sensations eliminated, it is difficult for a subject to distinguish a bit of apple from a morsel of onion; but without such experimental control we naively speak of the characteristic quality of an onion as its "taste," whereas it is identified almost wholly by its odor.

A passage from Woodworth illustrates the intimate cooperation of some of the other senses:

We look out of the window and "see it is wet today," though wetness is something to be felt rather than seen; having previously observed how wet ground looks, we now respond promptly to the visual appearance by knowing the indicated state of affairs. In the same way, we say that we "hear the street car," though a street car, we must admit, is not essentially a noise. Strictly speaking, what we hear is a noise, but we respond to the noise by perceiving the presence of the car. Responding to a stimulus presented to one sense by perceiving a fact which could only be directly presented to another sense is exemplified also by such common expressions as that the stone "looks heavy," or that the bell "sounds cracked." (Woodworth, 48)

From actual experience we know how a cracked bell will sound, we expect that a street car will make the noise that we are accustomed to hear street cars make, and that the ground, when wet, will have the appearance that we now can see. The connections between the visual impression of the bell and the sound, between the appearance of the street car and the sound it makes, and between the feeling of wetness and the appearance of the wet ground all are gained through experiences that we can verify at any time.

151. Nature of synesthesia. The term "synesthesia" is usually restricted to intimate association between sense modes which normally do not manifest a very close relationship. The taste of an onion, which is really an olfactory sensation, is not called synesthesia.

The most common form of synesthesia is that in which a sound stimulus gives rise to a simultaneous sensation of a

definite color or light. Those who report the experience state that when a sound stimulus is presented to them they perceive a definite color just as clearly as though a light stimulus had been presented at the same time.

Just how many persons experience colored hearing has not been definitely ascertained. Studies of children and adults show a variance from 1 to 60 per cent in the proportion who manifest this phenomenon. (Karwoski and Odbert, 18; Seashore, 40) Probably some association between sound and color is rather common, but the frequency of an intimate association is probably not so common as these figures would lead us to believe.

Sensations of color have also been reported to accompany sensations of taste, smell, pain, pressure, and temperature. There have been rare instances in which subjects have reported the experience of a sound sensation when presented with a light stimulus; others have reported smells and tastes when presented with a sensation from another field. Quite commonly an elementary sensation results from hearing a spoken word.

152. Examples of synesthesia. Myers (31) reports a subject who experienced very definite color sensations when tones of different pitch were sounded. For example, low C on the piano was seen as brown, upper C (500 vibrations per second) as rosy brown, brown, or pink becoming blue, and a note in the upper singing range as very light, thinnish blue.

One woman reported that she saw bright red needle-like figures when she had a sharp, momentary pain. If the pain were prolonged and sharp, she saw a jagged line like lightning, while a dull pain produced a large, brownish-purple figure shaped like a globe. (Dudycha and Dudycha, 9) Hollingworth and Weischer (15) tell of a girl who saw colors when certain words or names were spoken. At the age of eight she was surprised to find that others did not have similar experiences.

Karwoski and Odbert (18) found several college students who saw patterns of colors with a definite figure and background when portions of certain musical compositions were played. They tended toward consistency in certain reactions. For example, they saw brighter colors as an in-

crease in brightness when they heard louder music, graceful figures when they heard smooth music, and jagged lines or patterns when they heard staccato or syncopated music. In the case of music, instead of single notes, the synesthesia nearly always took the form of a pattern in response to the total stimulus situation. These patterns might be bands of colors, moving lines of colors on a background, or a complex configuration.

XXXV. HALLUCINATIONS

After we have examined the nature of hallucinations, we shall study the different forms that occur; the ways in which they develop; and finally, the different factors that should be considered in an attempt to explain their psychological background.

153. **Characteristics of hallucinations.** In the previous section we mentioned that there is no sharp line of demarcation between illusions and hallucinations. However, when the subjective emotional element is so strong that it is the determining factor in the interpretation, we have the foundation laid for hallucinatory experiences.

1. *Hallucinations are individual interpretations.* Hallucinations are interpretations in terms of the subject's personal set (bias or preference). Sometimes this set is a natural result of the circumstances. This is the case in the following hallucination (Carpenter, 7, p. 158):

Suspicious were entertained... of a woman who was supposed to have poisoned her newly-born infant. The coffin was exhumed, and the Procurator-fiscal, who attended with the medical men to examine the body, declared that he already perceived the odor of decomposition, which made him feel faint, and in consequence he withdrew. But on opening the coffin, it was found to be empty; and it was afterwards ascertained that no child had been born, and consequently no murder committed.

In this case it would have been natural to expect an odor and there may have been an olfactory stimulus from the freshly moved earth. A perfectly natural anticipation determined the olfactory hallucination.

This case illustrates the fact that hallucinations are purely individual interpretations. They can only be understood when we know something of the personal setting. To the outsider they are irrational, but when we know the mental background of the subject they are not so absurd as they seem.

2. *The hallucination is real to the subject.* He is convinced that he is actually perceiving the thing as he interprets it. It is objective to him. The patient will state: "These voices seem to me just as distinct as your voice, and if I regard your words as actual, so I must the other words which come to me. I do not know where they come from but I hear them just as I hear your voice." There are all degrees of objectivity in various cases. The degree of belief in the reality of the "vision" or "voice" can be elicited from the patient by questioning him as to the details. If they seem to him to be absolutely real and objective, the patient will be able to tell the color of the hair and the eyes of the person he sees, the clothes he wears, and the way he acts. He will tell you whose voice it is, what it is saying, and the way in which it speaks. A boy who is expecting his mother to call may be convinced that he hears her, although she is not close by, and will obey as though she had actually spoken to him.

3. *The one who has an hallucination responds to it as though it were a real perception.* Here again there may be varying degrees, but the patient who has a vivid hallucination will respond just as he would to an objective stimulus.

A patient . . . often heard in the evening and at night the voice of her father, who was dead, calling her to him in heaven, and thereupon she would run to the window, and, looking up to heaven, would talk aloud to him for hours at a time. (Störring, 43)

154. **Hallucinations in different sensory fields.** Hallucinations may be confined largely to one sense field or may involve several sense fields at once. The most common are in the auditory and visual fields. For the sake of clearness, it may be well to survey the characteristics of the hallucinations for the following sensory fields: auditory, visual, taste, smell, pain, and kinesthetic.

155. **Auditory hallucinations.** The simplest type of auditory hallucinations may be merely simple clangs, sounds of cracking, buzzing, and similar noises. In some instances there may be a physiological basis for these noises (i.e., some disorder of the sense organ or nerve pathway), but nevertheless, they may form the groundwork for the development of more complex hallucinations. The subject may, for example, in-

interpret these noises as the workings of some malignant influence brought to disturb him. One young man said that as soon as he tried to add a column of figures his persecutors contrived to make noises in his ears so as to confuse him. The result was that he lost in efficiency and was eventually discharged. It is possible that elementary sounds were interpreted by this young man as words and incorrect numbers. Even a buzz or a hum may resemble a word form. In corroboration of this it has been found that cases of auditory hallucination have been accompanied by ear diseases and that the hallucinations were alleviated by a treatment of the local ailment. This should not lead to overemphasis of the organic factors, for in the great majority of cases no such element has been found.

Complex auditory hallucinations often take the form of attack and defense voices. The subject hears himself called vile names; he is told to do vicious acts. One person said that the voices were trying to make him do away with himself. They would say to him, "Look, he is going to throw himself in front of that truck. No, he did not do that, he thinks he will escape but he cannot for he will jump in front of that street car. He is too big a coward. He knows too much for us to let him live but he will never get a chance to tell." In other cases the voices may come to the defense of the victim. "She is a virtuous girl. We will protect her from that vile man."

Again the voices may speak directly to the person instead of about him. One individual when asked a question would pause before replying. When asked why she paused, she stated that she always waited for the voices to tell her what to say. After a pause she would answer the examiner's question, but the answer was always dictated to her. Criminal acts have been blamed on the fact that the victim did what the voice told him to do. In one instance where a man confessed he had slain a whole family with an axe, he said that a voice told him, "Take up the axe. Enter and slay. Take up the axe. Enter and slay."

The voices may be assigned by the patient to various sources. Sometimes they seem to come from within the patient's body—the chest, the abdomen, the throat, the ears,

or almost any other part. Again they will be assigned to the outside. The source may be in a neighboring room, and the patient then believes he hears them through the wall. Or he may explain that the voices are transmitted to him by means of radio, telephone connections, or by mental telepathy. If accompanied by visual hallucinations, the patient may state that the person speaking is right there talking to him just as really as is the examiner himself.

The following is a document written by a patient in his attempt to describe his experiences:

The voices came from the corners of the room, from the earth in the garden, from the cellar below, from the murmur of flowing water, from the feet of human beings (first from my uncle's feet as he walked up the parsonage stairs), from the walls. There were purring spinning-wheel voices and humming-top voices, there were trumpet-like voices, there were dull hollow voices; there were voices sounding like the tone of the objects from which they proceeded. Voices came from the ticking of the clock's pendulum in the maid's room, from the drawing of the fire in the stove, from the ringing of the door-bell. Here I have been in this ward for two years and a half, and almost every day and every hour of the day I hear voices about me, sometimes sounding from the wind, sometimes from footsteps, sometimes from rattling dishes, from the rustling trees, or from the wheels of passing trains and vehicles. I hear the voices only if I attend to them, but hear them I do. The voices are words and tell me one story or another, just as if they were not thoughts in my head, but were recounting past deeds—yet only when I think of them. The whole day through they keep on telling truly my daily history of head and heart. (Störing, 43)

As evidence that the voices come from an outside source the subject may state that the language is of the most vile, obscene type, language that he himself never used. Since it is not the language that he uses, it must be from some other personality.

Sometimes the patient has an inkling that his hallucinations are in some way connected with his own mental processes. He complains that the voices express his thoughts before he has a chance to think them himself. Some patients complain that they never get a chance to think for themselves. Their thinking is always done for them; their thoughts are given to them. If they attempt to read, the voices will read in advance to them; if they attempt to speak, they will hear

their thoughts uttered before they have an opportunity to speak. This close relationship between thinking and the voices is illustrated by the statement of one patient: "Evil thoughts are always coming into my mind to be uttered; I can repress them, but then I hear them uttered in my left ear or my head." (Störring, 43) Another patient says that "thinking hurts him, for he cannot think for himself. Whenever he begins to think, all his thoughts are dictated to him. He is at pains to change the train of thought, but again his thinking is done for him . . . In church he not infrequently hears a voice singing, anticipating what the choir sings . . . If he walks down the street and sees, say, a sign, the voice reads out to him whatever is on it, the surname of some tailor or shoemaker, or the like. He affirms it is not he that reads, for sometimes he is not thinking of the sign at all, and yet the voice reads out to him what is on it. If he sees an acquaintance in the distance, the voice calls out to him, 'Look, there goes so and so,' usually before he begins to think of the person. Occasionally, though he has not the least intention of noticing the passers-by, the voice compels him to attend to them by its remarks about them." (Störring, 43)

In other cases the voice is not so clear as these illustrations indicate. The patient will tell you that he does not hear definite words, but rather that he has a vague impression that he should not have done so and so. Something more like the soundless "voice of conscience" keeps troubling him. This is likely to be an accompaniment of certain forms of depression. The patient will state that something is telling him that he should not have acted as he did. What this something is he cannot specifically state. Hence, it is sometimes hard to determine whether the patient is actually hearing a voice or whether he is merely expressing a vague self-accusation as an explanation of his emotional condition.

156. Visual hallucinations. The simpler types of visual hallucinations may take the form of flashes of light, fiery pillars, rainbows, or other colored forms. In complex form they are usually visions of writing, human figures, animals, and other complex visual objects. The following case illustrates a visual hallucination combined with an auditory hal-

lucination and at the same time gives some of the background leading up to the hallucinatory experience.

This patient was a very cultured lady, a widow. On her husband's death she had to adapt herself to her altered circumstances, and having little knowledge of business she fell into debt, and borrowed money from a cousin to whom she had shown much kindness in earlier days. When she failed to repay the money this cousin began to pester her for it roughly, and was forever saying to her, "When are you going to get me the money? If you don't bring it now, I'll tell your son" (who helped support her). Her worries ended in . . . an attempt at suicide which led to her internment in an asylum. The third day after her arrival she began to have hallucinations. "Does he come in here too, the brazen fellow?" Asked whom she meant, she replied, "My cousin—he wants his money. He is saying, 'When are you going to get me the money?'" "Where is he?" "There by the cupboard; don't you see him? Surely you must see him. Do you want to make me out a fool? I am not crazy. Look, he's winking at me to say nothing about him and his villainy, the rascal. But I'm just going to tell it all. There! now he's putting his tongue out at me. I can't look at him any longer. I only hope he'll do me no harm." As soon as she turned her gaze away from the spot where the figure appeared she saw it no more, that is, it did not follow the movements of her eyes. It appeared to her "by the cupboard," more precisely as coming out from behind it. She was afraid her cousin might have followed her and hidden himself, and might suddenly spring out of his lair. If anyone came between her and the spot where she localized the figure, so as to hide it from her, its localization changed, and she saw her cousin looking over the other person's shoulder. (Störing, 43)

Here the hallucination is obviously a projection of the fears of the patient.

The ability to visualize doubtlessly varies greatly in normal persons. Some normal persons possess a high degree of proficiency in this respect, and they delight in playing with visual pictures. The playful use of visual hallucinations with an appreciation of their unreality is shown in the experiences reported below.

I exercise no control over them, as I have repeatedly endeavored to recall the sights but without success; again, when I least expect them, they appear, though never until after having retired. In character they are panoramic, one scene appearing for a few seconds, to be followed a moment later by a vision entirely different. I regard their development with great interest and enjoyment. At times when others have been in my rooms I have been pleased to entertain them with descriptions of these visions as they appeared one by one. Though my eyes are closed, I know I am fully awake, else how could I describe the sights accurately at the time and furthermore have the power of recalling them long after? . . . As to the subjects of these visions:

They are sceneries from nature of various kinds, streets where I see rows of houses mostly of dark brown sandstone and of stately architecture, handsome rooms with beautiful furnishings and hangings, all of gorgeous hue and wondrous design. (Yawger, 49)

Visions are probably more likely to have religious or mystical significance than are other types of hallucination. Patients will see messages written on the wall telling them what to do. One patient received a message telling him to marry the woman who lived in the apartment above him. He interpreted this as a divine message which he was in duty bound to attempt to obey. He could not tell the exact words of the message, but he described it as having been written on the wall. In other cases the exact words may be seen.

157. Hallucinations of taste and smell. Most of these are of an unpleasant nature. The patient complains of fetid odors, of stifling air, filled with stench from urine or feces, of fumes of sulphur, smoke, or poison gas. Usually the source of these is not given, but at times they are referred to the patient's own person. He feels that he is rotting and giving rise to the odor that offends him. Having such an undesirable connotation, this type of hallucination is likely to be hidden. One of our patients concealed for three months the fact that she had such hallucinations. At the end of that time she confessed that during all that period she had been oppressed by malodorous emanations from her own body.

Hallucinations of taste are difficult to distinguish from delusions. The patient will complain of poison in his food. Whether this is due to a definite hallucination of a gustatory sort or to a false belief is often hard to ascertain. Hallucinations of taste do play a prominent role in certain abnormalities in spite of this difficulty of clearly distinguishing them.

158. Hallucinations of pain. Patients may describe sensations which they speak of as stabs, darts, electric shocks, or queer unpleasant feelings of various sorts. In many cases it is doubtful whether these are real. Their truth is belied by the fact that the patient seems perfectly happy at the same time that he is complaining. The following story illustrates a case where the pain was certainly not real and yet gave the impression to the observer that it was distinctly so. It was no doubt real to the patient.

A butcher was brought into the shop of . . . a druggist, from the market place opposite, laboring under a terrible accident. The man, on trying to hook-up a heavy piece of meat above his head, slipped, and the sharp hook penetrated his arm, so that he himself was suspended. On being examined, he was pale, almost pulseless, and expressed himself as suffering acute agony. The arm could not be moved without causing excessive pain; and in cutting off the sleeve, he frequently cried out; yet when the arm was exposed, it was found to be quite uninjured, the hook having only traversed the sleeve of his coat. (Carpenter, 7)

159. Kinesthetic and tactual hallucinations. One form of kinesthetic hallucination is called levitation. The subject feels that he is being moved from place to place when no movement has occurred. Usually such hallucinations are rather vague and indistinct, occurring most often when the subject is in a half-sleeping condition. The commonest reports of levitation are not hallucinations in the true sense but are illusions produced by dimly perceived stimuli. The type of levitation produced in spiritualistic seances is of this sort.

In another form of kinesthetic hallucination the individual does not feel transported *in toto* but states that part of his body is being manipulated and that he is forced to move. He says that his hand is being made to wave or to write or to do untoward acts. He says that he is being made to walk when, as a matter of fact, he is standing still.

Sometimes these take the form of verbal hallucinations; that is, the patient has a feeling that he is talking when he is perfectly quiet. Mutism may result from this condition. The patient thinks he has answered a question or has spoken to the examiner when he has not uttered a sound.

Some cases of touch and kinesthetic hallucinations are probably really illusions created by nerve irritations such as paresthesias of cold water trickling down the skin or bugs crawling. But a feeling of bugs crawling and an itchiness when watching a lousy person scratch is a real hallucination. (Nielsen, 32)

160. Development of hallucinations. Where the hallucination is the by-product of some organic disease process, it may appear suddenly and in completely developed form, and may in turn disappear just as quickly. Chronic hallucinations, however, often exhibit slow and gradual development, and it is from these that we can get some inkling as to the nature

of their growth and as to the reason why they take such firm hold upon the individual.

In the first stages of development, the subject usually knows that the perception is not real. Its presence leaves him bewildered or questioning and leads him to investigate the source of the experience that he cannot understand. In the early stages they can often be shown to be simply radical misinterpretations of sense perceptions. The following example illustrates this:

As he was having a sweat-bath, he heard a melodious noise of drops of water falling into bowls, and through them he caught the sound of girls' voices, two different voices, speaking fast and low, and mocking at him, saying: "There he sits; see, how he puffs." He asked the bath-attendant who it was speaking, and to convince him that he was in error the attendant turned off a tap. Thereupon the splashing of water ceased, and with it the voices, only to begin again as soon as the tap was once more turned on. (Störring, 43, p. 26)

In the second stage, the patient enjoys the hallucinations. Doubts about their authenticity fade and they seem to be real. If a girl is longing to see her departed mother, it is more satisfying to believe the vision really was her mother than to convince herself that it was a misinterpretation. The hallucinations became real because the subject wants them to become real. Even the vile hallucinations can be explained as fitting in with the desires of the patient. To believe that the vile things are from some outside source is much more acceptable than to believe that they come from one's own mental processes. Even in this stage the subject may have some doubt as to their reality. He still is somewhat mystified by his experiences but is not so emphatic in his conviction as to their absurdity.

In the final stage, the subject takes his hallucinations at their face value. He believes in them just as sincerely as he believes any sensory experience and acts on them with even greater abandon than he will respond to normal sensory experiences. They are now not only real experiences, but they fit in with his affective life to such an extent that they gain the preference as determiners of conduct.

161. **Explanation of hallucinations.** From our description of hallucinations of various types we should judge that they

are produced by a variety of conditions capable of modifying the interpretation of our sensory experiences. Such factors are not simple or limited in scope. Hence, it is folly to attempt to explain all hallucinations by the same mental or physiological mechanism. In one patient we may find the operation of several different factors or in others the reasons may appear relatively simple. With this preliminary warning against a tendency to oversimplification let us review the most important causes of hallucinations.

162. **Peripheral or accidental factors.** The most important factors in the development of hallucinations lie in the personality of the patient. These are given an opportunity to function through the objective circumstances, which are accidental and which provide the soil in which the personality elements germinate.

1. *Fatigue.* General fatigue probably makes one who is already subject to hallucinations less able to resist them (Katz and Landis, 20), but as a direct causal factor it is of relatively little importance.

Sensory fatigue may cause aftereffects but these are usually recognized as fatigue phenomena and are seldom invested with any other significance. We are all familiar with the buzzing in our ears which follows some occasion when there has been a great amount of noise. We have all had spots appear before our eyes after we have looked at the sun or at some other bright light. We take such fatigue effects for granted, ignore them unless they are unusually vivid, and certainly do not mistake them for real perceptions unless some other conditions predispose us to do so. To misinterpret a buzzing in one's ears as a real voice may be easier than it is to imagine that one hears a voice when there is no auditory sensation whatsoever; but the buzzing and the fatigue that caused it, in such a case, are certainly incidental.

2. *Drugs.* There are a number of drugs whose effect seems to contribute toward the development of hallucinations. A few of the most important will be considered.

(a) *Alcohol.* Alcoholic hallucinosis is supposed to be characterized by auditory hallucinations. Bleuler (5, p. 341)¹ says:

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In most patients it is a case of the voices of several or many people not present who discuss the patient in a dramatically elaborate dialogue; that is, they discuss him in the third person; much more rarely do they speak to him. These voices threaten him, remind him of his sins, scold him, make plans as to how they will catch him and perhaps torment and torture his family also. Some egg the other on, or some of them side with the patient, try to defend him and save him. In very acute cases the connection is usually less organized; in place of more quiet scenes there is a confusion of voices. Sometimes the voices are rhythmic, partly synchronous with the pulse, and partly with an external sound, e.g., the ticking of a watch, as "You are a fool, you are a fool," or they take the form of rhymes and satiric verses about the patient. Frequently the patients hear their own thoughts or answers to them, or one ascertains what they are doing or criticizes their actions. Besides, especially in the beginning, one seldom fails to note sounds, such as buzzing, snapping of gun triggers, striking of rifle bullets, cracking, and sounds of horses' hoofs, all of which is related to the patient.

These effects of acute alcoholism are quite different from those that occur in *delirium tremens*, which is sometimes a sequel to chronic alcoholism. The hallucinations of *delirium tremens* are predominantly visual and tactual. The visual hallucinations are likely to be manifold, movable, mostly colorless, and have a tendency to be of small objects. The hallucinations of touch and vision both very frequently have the character of wires, threads, water sprays, and other elongated things. The elongated character of these hallucinations together with their tendency to be in continual motion has given rise to the widespread expectation that such patients will see snakes.

It must be remembered that alcoholism itself is usually symptomatic of some personality disorder. Acute alcoholic hallucinosis is probably less frequent than was once suspected. Norman (33), for example, has studied the problem closely and has found that many cases diagnosed as acute alcoholic hallucinosis are really better described as some other disorder, such as schizophrenia, with the alcoholism and hallucinations as symptoms. In chronic alcoholism, the schizophrenic pattern is not so clear-cut; manic-depressives are found in this group quite frequently, but the whole problem of classification is a difficult one. Alcoholic hallucinations, like all hallucinations, are products of a disorder of the personality as well as of the alcoholic stupor. (Karlan, 17)

(b) *Cocaine*. The hallucinations that characterize cocaine-

ism are those of sight and touch in the form of "small mites and parasites, which the patients sometimes want to demonstrate to us through a microscope under the impression that they have made a great discovery." (Bleuler, 5, p. 359; Zucker, 50)

(c) *Cannabis Indica*. The effect of *cannabis indica* (hashish) depends largely upon the individual. It is supposed to produce very vivid visual hallucinations of an erotic character. In some persons this is not the case. The person loses control of the sequence of thought processes and for this reason it has been suggested that the type of hallucinations it causes may be taken as an index to the personality make-up of the individual. Not enough has been done with this drug to form any definite conclusions. Alcohol and cocaine seem to have their dominant effect on the peripheral sensory nerves. The hallucinations that result are the attempt to interpret these unusual sensory impressions. The effects of *cannabis indica* seem to be located more in the central nervous system.

(d) *Mescal* (Peyote, *Anhalonium Lewinii*, or Mescal Buttons). Those who have observed the effects of mescal on themselves report very vivid colored imagery, kaleidoscopic in nature and varied beyond description. Small bits of faded color are seen as brilliant splashes, faint sounds become unusually noticeable, and normally unobserved kinesthetic sensations are so marked as to be annoying. Along with these hallucinatory effects there is usually some nausea and other unpleasant physiological effects.

Even with these common results of taking this drug there are wide differences in effect, depending upon the personality of the individual; but with all the vivid effects there is seldom any belief in the reality of the hallucinatory experience. It is merely a brilliant spectacle which the person observes.

3. *Diseases with Fever Deliria*. In the milder forms of deliria the patient may have hallucinations of sight and hearing which usually fit into his actual environment. A mother will see her little children beside her bed. A lover will see his sweetheart bending over him or speaking to him. Or a person may have fear hallucinations and see his creditors endeavoring to make him pay his bills. In a deeper stage of delirium

the patient may lose all contact with his environment, be entirely confused, and his hallucinations may end in excessive emotional outbursts. One child with scarlet fever reported Lilliputian hallucinations—of perfectly formed diminutive people and creatures. (Savitsky and Tarachow, 37) Lilliputian hallucinations have also been reported for other acute infections, such as typhoid fever, cholera, and erysipelas.

163. **Central factors.** Our interpretation of sense impressions does not depend wholly upon the nature of the stimulus, how it is changed by the sense organ, or on the other incidental factors that have been indicated, but largely upon central or personality factors. Nielsen (32) reminds us that hallucinations are centrally determined and derived from experience through the same physiological processes as other forms of recall. Of course, as in imagination, new combinations of experience may result so that the hallucination appears to be a new experience.

1. *Eidetic imagery.* Some children have the ability to see very vividly objects that are not present to their sight at the moment. Such a child, "after having been asked to look attentively at an object, is able, with eyes open or closed, to see this object again. This is possible either immediately or after a certain lapse of time, even after the passage of several years. Although the stimulus object may be reproduced with almost photographic fidelity, eidetic images differ from the original stimulus object with respect to color, form, and the number of details. They differ from hallucinations in that the eidetic individual does not believe in the objective reality of the phenomena but recognizes their subjective character; they differ from memory-images in that the phenomena are really seen." (Klüver, 22)

Great individual differences are found in the ability to see eidetic images. In one type the images come so readily that no actual visual stimulus is needed; whatever the child thinks about may take on the vividness of reality. Such a child may produce or banish the images at will; he can change the shape, size, or color of the images; seeing a house, he can, at the request of the examiner, see a train passing the house, or a car stopping before the house. On the other hand, there are those who see eidetic images only with great fidelity to the original

stimulus. Some see only blurred shadows while others see the stimulus object with almost photographic clearness.

The ability to see eidetic images usually disappears as the child grows to maturity. Whether this tendency in childhood is carried over in the adult to the tendency to project adult conflicts into hallucinatory activities has not been determined, but it seems reasonable to suppose that such might be the case.

2. *Suggestion may be a means for producing hallucinations.* As an illustration of the production of hallucinations by means of suggestions from another person, Sidis and Goodhart (42, p. 259) report the following experiment:

A subject of mine . . . falls into a deep state of hypnosis. When in this state his hand is made anaesthetic by post-hypnotic suggestions; it is then suggested to him that objects put into his anaesthetic hand will be seen by him on a screen. When he wakes up, his hand is anaesthetic even to the most painful stimuli. The anaesthetic hand is then put behind a screen and another screen is kept in front of his eyes. When objects are put into the subject's anaesthetic hand, he has visual hallucinations of them. Thus, if half a dollar is put into his anaesthetic hand, no matter how lightly, he sees it on the screen first as a circle on a flat surface, then the visual hallucination is gathering more solidity and reality, more details are gradually emerging, and finally it begins to look like a solid half dollar.

Various hallucinations may be produced by hypnosis. The subject can be made to take a pair of imaginary scissors and cut an imaginary string. He can be told that there is a bug on the back of one hand and will thereupon brush off the imaginary bug. He can be made to eat imaginary soup from an imaginary dish with an imaginary spoon. He can be made to lift an imaginary hat to an imaginary lady. He can even be made to hallucinate a color on a white sheet of paper and then its negative afterimage. (Erickson and Erickson, 12) All these can be aroused by the mere verbal suggestion of the hypnotist. All this is evidence that it is possible to have perceptual experiences as a projection of a central set or readiness to perceive them.

If this can be done when some outsider gives the suggestion, it is not difficult to understand how, if the subject has a sufficient desire to see, hear, or experience a certain thing,

he may unwittingly suggest to himself that he is experiencing it.

3. *Hallucinations produced by sensory conditioning.* Leuba (24) describes the production of what he terms images through sensory conditioning under hypnosis. During deep hypnosis two stimuli, such as the ringing of a bell and a pin-prick on the hand, were presented together for several trials. Then the subject was told that he would remember nothing of what happened while he was hypnotized. After he was awakened the bell was again sounded. He did not remember having heard the bell before, but he reported an itching sensation on his hand for which he could not account. This conditioned sensation Leuba called an image. Ellson (10) did much the same sort of thing. He presented a tone and a light together, and his subject came to hear the tone when the light was shown. In this case the subjects actually believed they were seeing the light, and these conditioned sensations were labeled hallucinations.

4. *Emotions as a cause of hallucinations.* An intense emotion of any sort may be the source of an hallucinatory experience. Probably the most important emotions to give rise to hallucinations are wishes, fears, and love. Many examples can be found of each of these and all three may be found in combination.

Varendonck (46, p. 339) gives an illustration showing how a wish can be transformed into an hallucination:

We were playing auction bridge, and in a certain game I had expected to win four tricks with my partner. When the game was over, one of my opponents said, "You have three tricks." I protested, and pointing to the cards, that were neatly arranged in packets of four in front of me on the table, I replied: "I beg your pardon, we have four and you have lost." I really perceived four, but after a short discussion I counted them four at a time and found that I was wrong: I had hallucinated four. It was my strong desire, my preoccupation, that caused this optical hallucination.

As is the case with this normal hallucination, so it is with many abnormal ones. The form of the hallucination often gives a symbolic picture of the ungratified wishes of the subject.

In the same way, fears can be the basis of such experiences.

When Brutus became very anxious about the battle that was to be the critical point of his career, he had a vision of Caesar, who promised to meet him at Philippi. Surely this vision was prompted by his fear.

Hallucinations may be a projection of love impulses. A woman, shortly after the death of her husband, saw him appear to her one night and call her endearing names. Being a woman of insight she understood that this was merely a projection of her own thoughts and the vision was not repeated.

5. *Hallucinations as defense mechanisms.* Emotions in themselves are not an adequate cause for hallucinations. If they were, all of us would be continually beset with hallucinations. Only as the emotions express a situation of internal maladjustment do they give rise to these bizarre experiences. From this point of view, the objective and peripheral factors that we have enumerated can be regarded as conditions which permit the emotional stresses to gain expression.

The thing most likely to cause such internal maladjustment is our struggle to live up to the ideals we set for ourselves. Since a number of our ideals are centered around morality, many hallucinations can be interpreted as a symbolical representation of the struggle that the subject is having to be good.

Hallucinations as defense mechanisms are most clearly illustrated in those of normal children. Sherman (41) concluded, from the study of nineteen children who experienced them, that children's hallucinations were a simple projection of some mental difficulty and that they took the form either of a compensation or an explanation of that difficulty. The difficulty in the case of one child first manifested itself as two conflicting tendencies—one impelling him to be good while the other, equally strong, was influencing him to be bad. Then the child saw a person on each side of him saying, "Be good," or "Be bad." Further development transformed these two persons so that the one was a "good man" and the other "the devil."

In another instance a boy became the object of much criticism and ridicule on the part of the other boys. Finally he became fearful of them and within a few months de-

veloped an auditory hallucination which took the form of a husky voice saying, "Come home!" The boy recognized the "voice" as that of his mother.

Sherman's findings have been confirmed by Levin's (25) study of four boys. He elaborates somewhat on the utility of the hallucinations in resolving conflicts and believes that they may function as: defenses which protected the boy from potential enemies, telling him not to fight; a means of providing pleasures that were otherwise denied him; a means of repressing unwelcome cravings, telling him to like his father whom he hated and wished to injure; and as an expiation for guilt.

Levin gives this important conclusion: "The data presented by the four boys would suggest that at least sometimes an impulse may be projected, not when it is overwhelmingly strong, but rather when it is relatively so weak as to be pretty evenly balanced by opposing ethical forces." The presence of a conflict between fairly balanced forces seems to be the factor that drives the subject to adopt a defense device, such as an hallucination, and not a strong impulse that can express itself without opposition. There is, in other words, a discrepancy between the needs and drives of the child and the reality offered him. Hallucinations occur as the child's effort to bridge this gap and to experience a satisfying reality. (Bender and Lipkowitz, 3)

The nature of many adult hallucinations suggests that they arise in a manner similar to that found so clearly in children. For example, one patient, a woman of about thirty-five, said that she was constantly hearing two voices. One told her that she was a good woman and said many nice things about her. This voice came from a man who was dressed in a white robe and who told her he was from heaven. The other voice told her to do bad things and assured her that she was bad anyway. This came from a man in a black robe with a curly mustache and pointed beard who informed her that he was a bad man. This was doubtless a projection of the struggle that she was having with herself; the visions and voices represented symbolically two parts of her nature.

Most persons have a struggle between the good and bad parts of their personality but recognize this conflict in its

true light. Others tend to project it and to describe it as a conflict between forces outside themselves, a conflict of which they are merely the witnesses. Hence, hallucinations can be regarded as defense reactions, devices to defend one's personal ideals. The early stages of such a development would be a frank recognition of the struggle: "Wouldn't it be fun to do that thing even if it is bad? No, I must not do it." The next stage is: "Something tells me to do that and something tells me not to do it." In the final stage, the patient sits by as an auditor and hears the voices struggling between themselves.

The reason for such a development is that it is much easier to admit that some outside influence or individual is bad than to admit that one has a bad tendency one's self.

Many psychoses have hallucinations as a part of the syndrome. The various forms of schizophrenia, manic depression, and general paresis commonly are accompanied by them, and frequently the delusion of the paranoid cannot be easily demarcated from the hallucination. In cases of psychotics, one must search for the cause of the hallucinations in the personality of the patients; it is an individual affair.

164. Treatment for hallucinations. Of course, if the hallucination is primarily the result of intoxication, a disease, or some physiological factor, the remedy lies in the correction of that condition. Even if a personality factor does enter into such hallucinations, the treatment would not be in a personality adjustment but in an organic adjustment. If, however, during a delirium or hallucinatory episode the individual showed that he was severely maladjusted, such information should be used after recovery from the hallucinations as a guide in helping the person to make a better adjustment.

In the case of alcoholic hallucinations electric shock therapy has been tried but without striking success. The real need in such cases seems to be a well-planned program of occupational therapy leading to eventual employment of a kind that will give the patient a new realization of his own worth and ability to meet his own problems squarely. (Norman, 33)

Where the hallucination is obviously based on an attempt to defend the ego from an unpleasant conflict, where it is a projection of the wishes, fears, or erotic impulses of the

subject, treatment has to be directed toward a better form of defense. This means that the pathway traveled in the development of the hallucination must be retraced and the patient led to perceive and admit that the thing portrayed symbolically in the hallucination is a part of his own ego. This is a difficult thing to do. It is often possible to get the patient to go so far as to acknowledge that *some* hallucinations *might* be projections of impulses, but he will immediately qualify this admission with the statement that *his* hallucination has no relation to repressed wishes, fears, or erotic desires.

If the patient's ideals are so high that he feels that "as a man thinketh in his heart so is he," he will be loath to give up his hallucinatory defense and admit that he has undesirable impulses. He must be taught that all persons have impulses that are not according to the highest ideals, that conduct is the criterion of virtue and not thoughts. The strong man is the one who has impulses that he restrains, not the one who has no impulses that need restraint.

A figurative expression of the philosophy that such a patient needs is this: "A man cannot prevent the birds from flying above his head, but he is not forced to permit them to make nests in his hair."

165. **Summary of chapter.** Perceptions, as the interpretation of sensations, are based upon the previous experience of the individual, hence both normal and abnormal perceptions are subjects for individual study. The way in which the sensations from different sense organs unite is well illustrated by the phenomenon of synesthesia.

The mildest degree of perceptual error is found in illusions in which a combination of objective and subjective factors produces a misinterpretation that is usually easily corrected. The more marked types of disorder, known as hallucinations, are developed in cases in which the subjective and especially the emotional factors dominate to such an extent that there may be a perception with no objective stimulus.

The thing that should be emphasized in our study of hallucinations is that they portray in a large measure the inner life of the one subject to them. When a person has a great

crisis come into his life an hallucination may appear as a projection of that crisis and should not be taken too seriously. Every normal person is entitled to a few hallucinations without thereby being regarded as unusual. They are largely the projection of emotional stresses, and it is the unusual person who, at one time or another, does not have emotional crises. Most people hide the fact that they have had any hallucinations because they fear they will be regarded with disfavor if they make the disclosure. If a teacher finds such a condition in her pupils she should not become panic-stricken and rush the child off for an examination, as this might precipitate the crisis. If she is wise and tactful, she could ascertain the cause of the emotional disturbance and help the child to adjust his difficulties and thus avoid repeated occurrences.

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CHAPTER VII

DISORDERS OF ASSOCIATION

Associations are to mental life what highways, railroads, footpaths, and other means of passage are to geography; but the associations are so vastly more intricate that breakdowns and roving are consequently much more imminent. We must learn the principles governing this associational system of mental life, the different factors that lead to traffic jams, wrecks, and strayings. How to analyze the situations we find and what to do to make the whole process more consistent and worth while is of primary importance. Not only is a knowledge of the associative system essential, but an understanding of the motives that lead an individual to pursue one pathway and to avoid others is necessary if we are to understand the associational life of an individual.

166. Illustration of rambling associations.

Nothing could be more copious than his (Coleridge's) talk; and, furthermore, it was always virtually or literally of the nature of a monologue; suffering no interruption, however relevant; hastily putting aside all foreign additions, annotations, or most ingenuous desires for elucidation, as well-meant superfluities which would never do. Besides, it was talk not flowing any whither like a river, but spreading every whither in inextricable currents and regurgitations like a lake or sea. . . . So that, most times, you felt logically lost, swamped, near to drowning, in this tide of ingenious vocables, spreading out boundless as if to submerge the world. . . . "Excellent talker, very—if you let him start from no premises, and come to no conclusion."

Charles Lamb's story of his having cut off the button by which Coleridge was holding him one morning, when he was going in to London by the Enfield stage; of his leaving Coleridge in full talk, with the button in one hand, and sawing the air with the other; and of his finding him discoursing in exactly the same attitude when he came back to Enfield in the afternoon,—is, of course, a ludicrous exaggeration; but it conveys, like other "myths," a true idea of the degree in which Coleridge was habitually "possessed" by the train of thought that happened to be passing through his mind at the time. (Carpenter, 12, pp. 268; 269-270)

Thinking involves the selection and coordination of associations according to some definite controlling principle so that we get somewhere. Some question should be answered, some problem solved, or some goal reached. Coleridge's talk

illustrates what happens when no control is exercised as to the selection of associations, an ineffectual rambling that serves no useful purpose save to enable the listener to know Coleridge better. It illustrates a form of what we shall later call *free association*.

XXXVI. SIMPLIFIED VERSION OF NORMAL ASSOCIATIONS

Before we take up unusual associations, we shall review the nature of associations, their different uses—reverie, phantasy, controlled association, and problem solving—following which we shall consider the nature of the control that makes associations of value.

167. **Nature of associations.** By association in mental life we mean, simply, relationship. For example, in our school-work we associate the name of Washington with a certain historical character, Mississippi with a definite set of geographical facts, two with a number sequence, and good with moral values. Such a relationship implies a neural connection. Hence, wherever such a linking exists there is the possibility of association. It is the dynamic interlacing and organization of the nervous system that makes a rich associational life in man possible. In order to orient ourselves so that our study of abnormalities in this field may be clear, it may be profitable to indicate certain salient facts regarding association.

1. *One impulse may arouse a number of others.* The one selected is determined by the following considerations:

(a) The closeness of the connection is determined either by inherited mechanisms or by the previous experience of the individual. Learning may establish so close a connection that "two plus two" inevitably is followed by the association "four." If, in the experience of the individual, a word has been a part of a great number of diverse experiences, it may stimulate a great variety of responses. For example, the word "horn" may bring forth the response "automobile," "boy," "Woolworth's," "shepherd," "Halloween," "boat," or any one of innumerable words that a person has learned to associate with "horn."

(b) The preliminary set may influence the response that will be given to a certain stimulus. Instructions to give the *opposite*, will limit the response to such words as "top,"

"dark," "tall," and "good" to "bottom," "light," "short," and "bad."

(c) Other things going on at the same time, and other impressions being received tend to make a certain connection predominate. If Mary is present, the word "girl" may lead to the association "Mary"; if Jane is present, "girl" may bring the association "Jane."

(d) A strong emotion may cause a certain connection to function that under other circumstances would not be potent in competition with other connections. If you have recently been frightened by a burglar, "noise" may make you think of "burglar," while in calmer moments it might lead to such a thought as "children" or "machine shop."

2. *There is a continuity of association processes.* Evidence indicates that there is never a cessation of mental processes except in complete stupor.

(a) The continuity of associations may be logical if the subject is in a problem-solving mood and attempts to select only those associations that are relevant to the solution.

(b) It may be a random continuity determined by seemingly trivial and even unrecognized relationships. It may be one of sound associations, as ramp, stamp, lamp, damp, and the like. Associations may follow in apparently chance fashion, as dog, star, persistence, freak, appleblossom, and the like. Even such apparently chance associations are, nevertheless, determined by a complex set of factors in the situation and in the neural processes of the one who makes the associations.

(c) There may be apparent breaks or absences in the continuous chain of associations, but these are likely to be changes in the degree of interest and attention, or in the ease of recall, rather than any real interruption.

(d) Sometimes the sequence may involve a succession of a few elements in a continuous round, but this is no more a stopping of associations than is an irrelevant or illogical jump.

3. *Every experience has some influence on the trend of future associations.* In a literal sense we are continually changing. Every experience makes us different from what we were before. Other things being equal,

(a) Recent experiences are given preference, but this advantage in turn wanes in the presence of newer ones. However the residual effect of past experiences is never lost.

(b) Repetition of an associational connection gives such an association added strength.

(c) Vividness of an experience makes the connections involved stronger than weak or colorless experiences. Seeing an elephant at the circus impresses a child much more than merely reading about one in a schoolbook.

168. **Utilization of associations.** Under differing circumstances, the way in which different connections are utilized varies. The distinction between the different forms that we shall mention is not clear and sharp. Rather, each form shades off into the others by imperceptible degrees. If you will examine your own mental processes, you will find that each of the following forms has its place in your associational activity. There is nothing abnormal about any of them when used in proper degree and setting.

1. *Reverie.* Where the different connections are permitted to act in accordance with their strength, the result is *free association*, a progression, unhampered by conventions or personal ideals, from one mental process or element to the next. Quite probably our associations are never free from control in a strict sense, but such freedom is approached in the condition we know as reverie, or daydreaming. One who spends hours lying in the shade of a tree, doing nothing, usually lets his associations roam where they will. In the dreams of sleep it is likely that the associations are even freer, but there is certain evidence to show that even in sleep the associations are under partial control.

2. *Phantasy.* Whereas in reverie the associations usually adhere to combinations that have occurred in the experience of the individual, in phantasy they occur in new combinations. Where there is no adherence either to experience or to logical relationship in these combinations, the effects are often bizarre. Where there is some relationship between fact and phantasy, this relationship is given the name *imagination*. Where the imagination has the possibility of leading to something of value we call it constructive or productive imagination. Sometimes phantasy expresses combinations that we

should like to see in reality, in which case we have wish phantasies or what are usually called "air castles."

Phantasies given to ink blots or to certain kinds of pictures can give some insight into the emotional and associational life of the individual. Masserman and Balken (32), for example, claim to have found that certain kinds of patients (e.g., hystericals, depressives, paranoids) give characteristic phantasies to the pictures of the Thematic Apperception test. They make up stories about these pictures that have certain properties in common. One reason for this similarity seems to be that the patients put the characters of the pictures into situations that symbolize their own conflicts and even try to get them out of their dilemmas by wish-fulfilling devices. Murray (34) would define phantasies in terms not only of being fanciful but also of wish-fulfilling, the person being almost driven by his own conflicts and needs in his phantasies. Of course he usually does not realize that his phantasies are in part determined in this way, since they are so aimless and playful-appearing with no conscious effort needed to produce them.

3. *Controlled association.* A preparatory set, question, or attitude may facilitate certain responses and inhibit others. In the laboratory, a subject is told to give the opposite of words to be presented, to give an object for verbs, or an adjective to modify certain nouns. He prepares himself to limit his associations to "opposites," to verb-object relations, or to noun-adjective relations, as the case may be.

Most of our associations are of the controlled type. We control our conversations so as to adhere to relevant responses. In thinking, we evaluate each suggested idea and entertain only those that seem to have a bearing on the main subject of thought, and in our conduct we attempt to eliminate acts that would interfere with our main objective.

Arithmetical processes are controlled by associations that have been learned—eight plus five leads to thirteen. In reading, the meaning of the word is determined by the context in which it appears. We set ourselves to take in serious vein what we see and hear in a church, to be amused at one type of motion picture, and to be puzzled by a mystery play.

Many jokes are based upon arousing in us one type of set and then injecting something quite irrelevant.

4. *Problem solving.* The most intricate type of controlled association is found in problem solving. Here the associations are not fixed by past experiences as definitely as in "two plus two equals what?" When a person is placed in a situation in which he does not know what to do, he is likely to begin one act, stop before it is completed, begin another, stop again and begin another or repeat the first, and so on until a satisfactory solution is reached. This partial reaction to various solutions results in a tension, which is a preparation to do any one of several different things. The solution consists in simply having the action completed whether it was an intentional completion or not. For example, the other day a woman came into an elevated train, and although there were plenty of seats, she could not make up her mind where to sit. She looked first at one seat and then at another, made a movement as if to sit in one and then a movement as if to sit in the other. Finally, the train gave a lurch and threw her suddenly into the seat nearest to her. Whereupon she sighed with relief and appeared to be happy.

A problem may range anywhere from a simple question to a state of extreme tension because the individual does not know how he should act at the particular moment. The condition common to all degrees of problem solving is a state of tension, the relief from which is attendant upon a solution. In some cases the tension may be highly distasteful to the individual, in others there is a thrill connected with the tension as well as with the resulting relief when the proper solution, or associative connection, is found. Reasoning is the process of directing associations according to the problem-solving method.

169. *Inhibition of associations.* In uncontrolled association, all connections may be traversed freely, and the pathways actually chosen are the results of the interplay of the different factors that tend to give the chosen ones preference over the others. Controlled thinking is largely the blocking of certain connections, a process technically called *inhibition*. Inhibition is the essential element in controlled thought.

Thinking is largely a trial-and-error process. A problem is

at hand with its resultant tension. Which path shall the associations take? One can but try. If the connection tried is not the proper one, the result will be increased tension. If it brings the solution nearer, the tension will be relieved gradually till the final solution is reached. So inhibition, or the blocking-off of irrelevant and non-successful connections, is the basis of thinking.

Emotional tension may also block connections that otherwise would function freely. The teacher who has made her pupils angry cannot expect them to do good work. A connection which under ordinary circumstances would be open and successful from a logical point of view may be blocked or inhibited because of some emotional factor. A listener once said he could not follow the arguments of a certain lecturer because he knew too much about the lecturer's personal prejudices. This has led some persons to infer that inhibition is an undesirable thing from a psychological point of view. This certainly is not the case. Inhibitions properly placed are the means by which mental life becomes orderly. Remove them and we have mere free association or reverie. When we understand that emotional inhibitions rather than the logical problem at hand may govern the sequence of associations, we shall not place undue emphasis upon the integrity of our logical processes.

This introductory statement as to the nature of the normal association process should clear the way for our understanding of unusual forms of associative activity as they appear in the classroom, in everyday life, in industry, and in all other phases of human activity. Let us keep clearly in mind the fact that we cannot understand mental behavior by attempting to follow one isolated idea through a series of forms. Associations do not occur in isolation but are always a part of an intricate mass of other associations which both influence and receive influences. We must abstract segments for the purpose of analysis, but we must continually remind ourselves that such segments do not appear in isolation in real life.

XXXVII. DISORDERS OF ASSOCIATION WITH
AN ORGANIC BASIS

An analogy may help us to get clearly before us the objectives of this and the following section. We may study vehicular traffic conditions by (1) road conditions—the effects of unserviceable and broken roads upon traffic, by (2) different possible routings and connections, and by (3) trends in travel, such as tours, conventions, etc. In our study we shall consider in this section (1) disordered conditions of the neural connections which interfere with normal associations, including aphasias and related disorders. In the next section we shall take up (2) peculiar associations or unusual routings of associations, and (3) peculiar constellations or trends in associations.

170. **Aphasias.** The word *aphasia* is derived from the Greek *a* (*alpha* privative) and *phasis*, derived from *phemi*, speak. Aphasia, therefore, means *without speech*. The word has been extended in meaning so that it implies a pathological impairment of the ability to use or to understand language. Language includes the proper reception of sense impressions and the motor expression of speech. In aphasia the language disturbance is based on a lesion (injury or other structural change) in the brain, usually in a certain area. Patients with aphasia may show difficulty predominantly in only the motor expression of language, such as getting the right word at the right time or in repeating what is said to them. Others may find it difficult to understand words that are spoken to them, yet may be able to read them if they are written or printed, and have only slight if any difficulty with expressing themselves. In a moment we shall examine one system of classification for aphasias with the predominant characteristic of each. Such a procedure may lead us to think that most cases of aphasia are clear-cut and show evidences of only one kind of difficulty. This would be misleading. Usually, patients have a general kind of language difficulty, which shows itself particularly in one area. Goldstein and his associates have gone so far as to say that aphasia is a disorder of the entire personality. In one sense this may be true; i.e., what affects one part of the personality no doubt thereby leaves the total personality changed. Such a concept does not seem particularly helpful, however, in understanding a disorder that is *primarily* one of language functioning. Likewise, we might say that the aphasic shows a mental deterioration because he

shows a disorder of language, since we know that language is highly important in any concept of intelligence. But the language disorder of the aphasic does not necessarily result in the same kind of behavior that is normally associated with mental deterioration. There are cases in which it almost does so. There are also cases in which other areas of intellect seem rather well preserved, and the major deterioration is in the language function. Probably no case is ever pure to the extent that only one language function is lost, and nothing else. There are always generalizing effects to other language processes and to non-language functions. (Hathaway, 22)

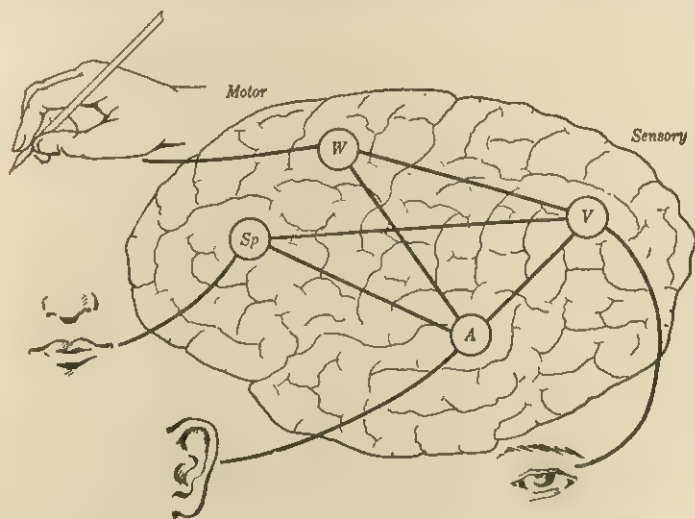


FIG. 10. DIAGRAM OF CENTRAL SENSORY CONNECTIONS

Any interference in the free activity of any of the pathways will cause disturbance. The nature of the disorder will vary with the areas and pathways injured.

171. **Cerebral basis for aphasia.** Hathaway (22) defines aphasia in these terms: "The characteristic effects of lesions of the cortical speech area are classified under the general term aphasia." Some kind of injury to the cerebral cortex of the brain is expected in aphasia. We cannot specify the exact locus of the lesion, but we know that it must occur in the general speech area, or its effects must be felt there. The speech area is toward the front part of the cortex, as the accompanying diagram will show. In a very high percentage of

cases the lesion must be on the "dominant" side of the cortex, or the side opposite to the handedness of the individual, for aphasia to occur. Normally for right-handed persons, the left cerebral hemisphere will be involved. The lesion is frequently found in the anterior portion of the speech area for disorders of language expression and partly in the anterior and partly in the posterior area for disorders of language reception, though this is not a hard and fast rule.

The speech area is a part of the brain just as the language function is a part of the intellect and of the personality. There are many connections and interconnections between this and other areas of the brain; it is not isolated, and neither is its function. We are not justified in holding to a strict brain localization theory as a basis for aphasia. We can only identify the general area; there are too many possibilities for complex influences to go farther. According to Weisenburg and McBride (46), "Every lesion which causes aphasia produces a negative and positive aspect. The negative is the result of the lesion and is responsible for what the patient cannot do. The positive, or what language and behavior the patient is capable of, is the result of the functioning of the uninjured brain. Such physiological activity is a live dynamic process and cannot be measured. That is why localization of language and its disturbances is impossible."¹

172. Classification of aphasias. There are several bases for classifying aphasias, and there are numerous terms for various special kinds of aphasic disorder. The following is a rather general psychological classification that will include only a few of these terms.

1. *Receptive, or sensory aphasia.* This form may further be subdivided into *auditory* and *visual* aphasia. The difficulty is in the reception of the stimulus and associating it properly with its referent and with a response.

(a) *Auditory aphasia.* In auditory aphasia the subject will not be able to understand what he hears. Furthermore, he will not know what he himself says. A man's speech is controlled by his auditory perception of what he himself is saying. If he cannot understand what he is saying, his speech is likely to be a jumble. He is able to talk, but he talks a meaningless

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jargon and does not know that he is talking nonsense. He will be able to read and can answer your written questions by writing. In trying to read or answer vocally, however, he flounders miserably. He may talk vociferously in his attempt to make you understand and will be amazed that you do not understand.

(b) *Visual aphasia (alexia)*. In certain instances the subject can hear, understand, and answer by speech what is asked of him, but he cannot comprehend printed matter and cannot answer by writing because he cannot critically read what he writes. He may write automatically, but if he does so he cannot read what he has written.

2. *Expressive or motor aphasia*. This may be either of a manual or verbal variety. In manual aphasia, the patient is unable to write due to a lesion of the motor writing center. This is called *agraphia*. Frequently, it accompanies some other form of aphasia rather than appearing as the major disturbance.

In the verbal form of motor aphasia the patient has trouble saying the words he wants to say. He may be unable to find the proper words or to make sounds comprehensible to others. He may also have special defects such as not being able to use words as names or to put them together in connected sequence so that they make sense. Often the patient knows he is speaking nonsense, but he cannot correct it.

3. *Expressive-receptive aphasia*. As the name implies, patients with this form of aphasia have difficulty in receiving and interpreting language stimuli and also in motor speech functions. There are serious limitations in all language performances. Usually there is little difference in the severity of the expressive and receptive losses. This does not mean that these patients are necessarily badly deteriorated. Their aphasia may not be severe, and also their non-language and social behavior may operate at relatively high levels. This may be true in any kind of uncomplicated aphasia.

4. *Annesic aphasia*. This disorder is marked by the difficulty of the patient in being able to get the right word to name an object or condition. His speech is limited to colloquialisms, emotional language, and automatic expressions, such as counting. What he does say is free and well-pro-

nounced, but there is little he can say without naming things; thus there is hesitancy in his speech. He can also recognize the correct word when it is given to him and understand most spoken language.

173. Re-education of aphasic individuals. That aphasics can be retrained at all is encouraging, but the rate and degree of recovery is sometimes discouraging. Progress is usually slower than in normal individuals who are learning for the first time. (Hathaway, 22) Much of the retraining may be accomplished as a result of physiological recovery; i.e., retraining of defective tissue to working condition. Many times aphasics who can be retrained do not achieve a level of language functioning comparable to that which they possessed before their disorder. Even so, they are likely to get a tremendous "lift" in morale as a result of the improvement they do make.

The senior author had occasion to study the possibility of re-education in a case of aphasia from an injury in World War I. This patient could distinguish different objects that were shown to him, and could pick up a screw driver and apply it to a screw head and operate it. He could not write what he heard although he could copy what he saw. Nor could he understand what was said to him. When asked to pick up a screw driver he had no notion of what was spoken to him. He could not answer a question, and always responded with the nonsense word "sariat." He did not know that he was talking nonsense and would repeat this word over and over apparently thinking that he spoke coherently. On occasion, however, he would speak a consistent sentence, but he did not know that he was talking coherently when he did so. He did display the usual automatic speech. Evidently, then, the main disorder was a receptive one, primarily auditory.

An attempt was made to teach him to understand auditory impressions. Twelve objects that he recognized and could use were placed before him. The names of these objects were printed, one name on a card. The article was indicated, the printed card shown, and the experimenter spoke the name. He was made to attempt to repeat it. He at first would simply say, "sariat." By a great amount of effort he finally chanced to say the correct word instead of "sariat." Then he

learned to pick the right ones when they were named. Finally, he was enabled to write the name when it was spoken to him. His control came back very gradually and unless his attention was focused definitely he would break through with his old word, "sariat."

Just what happens when an aphasic individual is retrained we do not know. There are two distinct possibilities, each of which has some evidence to support it. The lesion causing the aphasia is on one side of the cortex. The opposite side may take over and function for the injured one. The other possibility is that other pathways may be able to take over the function of those that have been destroyed. (Hathaway, 22) If this is so, it is further evidence of the wonderful adaptability of the nervous system. Naturally, if the lesion is too widespread, such training would be inordinately difficult, if not impossible.

174. **Simulation of aphasia.** Functional aphasia is not a common term, partly because difficulty of function is one characteristic of the organic picture and partly because other terms are frequently used for similar phenomena when they appear without cerebral lesion. One may encounter a functional aphasia, however, a condition that simulates the organic type but that is based upon no organic disorder, no injuries to the nervous system. A case of this sort was being studied at the same time that the organic one just described was being trained. In this instance, it was impossible to get a consistent series of tests. Furthermore, the functional case made a recovery in a very mysterious manner. His speech returned almost overnight, which we have already seen is characteristic of functional disorders.

175. **Agnosia.** There are certain sensory disturbances of association which resemble aphasias but do not involve language functions. These are called *agnosias*. Astereognosis (page 197), which we have already discussed, has been classified by some as one form of agnosia. In the absence of an actual sensory defect, some patients have difficulty in hearing noises and music. Others cannot recognize objects and pictures or understand colors as properties of objects. (Morgan, 33) If given a fountain pen, such patients may use it as a stick or try to write with it with the cap on, and they have real

trouble in matching colors. Agnosia is not as common as aphasia and frequently appears as part of a more complex disorder.

176. **Apraxia.** The other side of the non-language disorders resembling aphasia is *apraxia*. This includes disorders of movements in the absence of a motor or sensory defect. Examples include disturbances of imitating or performing rather mechanical movements. The patient may not be able to perform them or he may do so with great hesitation and awkwardness with an inappropriateness of the movements he does make. Such difficulty appears in gesturing and copying movements of others or reproducing a drawing that is shown the patient. He may utterly fail in a form board test (a simplified jig-saw puzzle), and may be unable to use scissors properly. Familiar skills and simple performances may thus operate at only restricted levels. Like agnosia, apraxia often appears as part of a complex difficulty.

XXXVIII. PECULIAR ASSOCIATIONS AND CONSTELLATIONS

Our associations may not be routed in the right ways to produce efficient behavior. They may likewise become organized and grouped in inefficient ways. We shall describe some of these in this section. While these are more descriptions of behavior than explanations, we shall need to refer to these terms in later chapters where the dynamics are more obvious.

177. **Abnormalities in the flow of associations.** We shall consider in turn six different types of peculiarities of associative activity, namely: (1) dearth of associations, (2) retardation, (3) blocking, (4) flight of ideas, (5) circumstantiality, and (6) incoherence.

1. *Dearth of associations or ideas.* There are four sorts of persons who may manifest a dearth of associations: the uneducated child, the ament, the dement, and the overspecialized person.

A child who has not had as many experiences or as much educational training as an adult cannot be expected to have as rich associations. A city child who has never seen a cow cannot be expected to have a wealth of ideas connected with such a word. His dearth of associations is normally surmounted.

The ament and dement have not the mental capacity for rich associations.

Overspecialized persons may also have a dearth of ideas. Their poverty of associations is not likely to be so pronounced as that of the other three forms, but they may show an appalling ignorance of the simplest things about life. True, when permitted to dwell on their hobby their associations are numerous, but once off that track they are as helpless as a child. In the study of mental cases, it is possible to find those who, from some strong emotional bias, become highly specialized. Their emotional attitude prevents them from dwelling on anything not related to their particular emotional set. The associational life is designed to coordinate the different phases of life, and a person is misusing his powers when he permits an emotion or a hobby to narrow his associational life to the extent that he becomes infantile in realms other than his chosen one. How often a clever businessman shows implicit faith in some fraud labeled "scientific"! How often the professional man makes poor investments!

Poverty of speech or other limitation of association does not always imply a poverty of associations, and so in examining a patient one should not too quickly assume that there is a real dearth. Two conditions are especially prone to give a false impression of dearth of ideas. The individual may have learned to withdraw into himself when difficulties arise. As he becomes more and more seclusive, he expresses fewer and fewer ideas and the onlooker is likely to conclude that he has none. In these cases, tests have shown such a conclusion to be unwarranted. The subject has ideas in great plenty, but he hides them from the observer. Another type of case which gives this notion is that of a severe depression. Some individuals become involved in such severe conditions of emotional depression that they are in an apparent stupor, and their only output is a few incoherent noises or words.

2. *Retardation.* Two types of retardation may be distinguished: executive retardation and initial retardation. Executive retardation results when an unusually long time is required for the succeeding associations to find expression. We cannot be sure that slow expression of ideas means slow

thought processes, but in extreme cases it is pretty evident that the person is thinking slowly as well as responding slowly.

A concomitant of this is the symptom known as initial retardation. The patient waits an unduly long time before beginning to respond to a question or other stimulus. Of course, on being asked a question, one may ponder upon various replies before beginning to respond. This certainly is not a slowing-up of association processes; indeed, one's mental life may be extremely active in such a situation. One may be doing the wise thing to deliberate before replying. But, if you were asked your name, and after waiting sixty or ninety seconds were to reply calmly, "John," one would assume with some justification that you had slow associations. Hence, either initial or executive retardation may be the result of clever and active deliberation, or it may be the result of extreme slowness of thought. Only the relating circumstances will indicate which is present.

3. *Blocking*. Blocking, on superficial observation, might seem to resemble retardation, but it should be carefully distinguished. In retardation, the subject, if given time, will give a response. He may take a long time and you may begin to think that he has lost your question, but eventually he will give a reply which is likely to be logical and sensible. In blocking, on the other hand, the subject may or may not begin to respond; but he will stop suddenly and no amount of coaxing on your part or seeming effort on his part will get him over the obstacle. For example, you ask a person of this sort where he is going. He begins to answer, "I am——" and then stops, seemingly unable to go on. You try to prompt him by asking, "Yes, you are what?" He may even begin again and get as far as "I am——" and stop. A block is an insurmountable inhibition against the expression of an idea.

The causes of mild forms vary with each case, but one may look for such things as fear of ridicule, shame for something the person has done, an attempt to keep some secret, or even such a trivial thing as the fact that someone has been too impatient in demanding an immediate response to questions.

4. *Flight of ideas*. No matter how irrelevant to the external situation our internal associations may be, when we speak we usually exercise inhibitions to such an extent that

our expressions are somewhat logical and related to the situation. What is called a flight of ideas is indicated by the subject's unusual distractibility, a tendency to jump from one line of thought to another, and an apparent inability to keep track of the topic in mind. This condition is due to a lack of normal inhibition. The slightest irrelevant stimulus will change the trend of associations. Such a reaction is common in little children because they have not learned to control their associations. A teacher will be explaining with great earnestness some problem or telling a story when the little boy will interrupt with such a statement as, "My, your hair is pretty," or "How did you get that scar on your neck?" or "Are you going to the baseball game Saturday?"

The following example taken from the speech of a patient shows flight of ideas:

Question, "Who is the president of the United States?" "I am the president, I am the ex-president of the United States, I have been a recent president. Just at present I was present, president of many towns in China, Japan and Europe and Pennsylvania. When you are president you are the head of all, you are the head of every one of those, you have a big head, you are the smartest man in the world. I do testify and all scientists of the whole world. The highest court of doctoring, of practicing, I am a titled lady by birth of royal blood of rose blood (pointing to another patient), he has black blood, yellow blood, he is no man, a woman, a woe-man, etc!" The stimulus word "key" elicited the following: "Oh, you can have all the keys you want, they broke into the store and found peas, what's the use of keys. Policeman, watchman, dogs, dog shows, the spaniel was the best dog this year, he is Spanish you know, Morro Castle what a big key they have (refers to a visit to Cuba) Sampson, Schley, he drowned them all in the bay, gay, New York bay, Broadway, the White Way, etc." (Bleuler, 9)

5. *Circumstantiality or impartial redintegration.* Circumstantiality is characteristic of the person who lacks ability to classify his associations and to choose relevant ones in the expression of thought sequences. As the term "impartial redintegration" implies, it is often the exact reproduction of sequences as they occurred in the previous life of the individual. *Redintegrate* literally means *to make whole again* or *to renew*. In relation to memory it means the exact recall of an experience. Impartial redintegration means that the different elements of the experience are not evaluated or classi-

fied in any way, but are recalled with equal emphasis upon both trivial and important elements. Ask such a person a question, and he will give you an answer, but will incorporate in his answer numerous irrelevant details that seem to him to be essential to the answer but that to the hearer are annoying, non-related items. In ordinary parlance this is characteristic of a "one-track" mind. The original experience seems to have followed one single path and the only way to revive a part of it is to travel the whole course as it was originally produced.

An illustration of circumstantiality with elements of flight of ideas is typified by the character of Miss Bates in Miss Austen's *Emma*.¹

"But where could *you* hear it?" cried Miss Bates. "Where could you possibly hear it, Mr. Knightly? For it is not five minutes since I received Mrs. Cole's note—no, it cannot be more than five—or at least ten—for I had got my bonnet and spencer on, just ready to come out—I was only gone down to speak to Patty again about the pork—Jane was standing in the passage—were you not, Jane?—for my mother was so afraid that we had not any salting-pan large enough. So I said I would go down and see, and Jane said: 'Shall I go down instead? for I think you have a little cold, and Patty has been washing the kitchen.' 'Oh, my dear,' said I—well, and just then came the note. A Miss Hawkins—that's all I know—a Miss Hawkins, of Bath. But, Mr. Knightly, how could you possibly have heard it? for the very moment Mr. Cole told Mrs. Cole of it, she sat down and wrote to me. A Miss Hawkins—"

6. *Incoherence*. Incoherence is the name used to describe sequences of associations that to the listener have no relationship. The sentences are often stated clearly enough but the meaning is unintelligible. Where the condition is at its worst, the sentences are a meaningless jumble—they are a veritable "word-hash." This is an example:

"I am going to marry in June and build a bungalow. It's going to have heavy upholstering. It is going to be a mammoth bungalow. I am going to build a large bungalow on wire wheels. A large bungalow with wire wheels and mahogany top and many, many—mahogany top with wire wheels—Ford coupe with wire wheels. I am going to build a bungalow with, and buy a Ford coupe with white wire wheels and two dozen eggs and many other things too. This bungalow will not be of solid granite but of stone works. In the year 1492 Columbus discovered America and in the year 77 the same thing happened to me. It was on the fourth of February and

¹ Cited by William James, *Psychology*, New York: Henry Holt & Co., 1908, p. 261.

they say the thing will have white wire wheels and a solid granite top. With white wire wheels, twenty-four dozen and ninety-two thousand, and seventy-four dozen coupes. It will not be of granite but of twenty-four dozen eggs. In the year 1492 Columbus discovered America." (Morgan, 33)¹

One who hears such a "word-hash" should be warned against the tendency to assume that there is no meaning in what a patient says if it sounds unintelligible. The most bizarre associations may have meaning for the one who utters them although they are the sheerest nonsense to the listener. Have you ever listened to a person carrying on a telephone conversation? You do not understand the significance of his remarks, but you do not for that reason assume that he is talking nonsense. So, when you consider that what the patient is saying probably expresses only a small portion of what is going on in his central nervous system, you will realize it is well not to be too quick to decide that his mental processes are disorderly.

The great significance of incoherence—with the exception of the kind that is caused by a gross disturbance of the nervous system—is that the person manifesting it is more concerned with his own problems than he is in impressing others that his mind is working in an orderly manner. Language is primarily the vehicle used to convey one's ideas to others. When one is incoherent he is not successful in conveying his message. The examiner needs to determine why. If there is an organic disturbance the person is likely to try vigorously to be understood. When there is no organic disturbance the indifference becomes manifest.

We have considered six types of peculiarity of associative activity. These are: (1) dearth of ideas, (2) retardation, (3) blocking, (4) flight of ideas, (5) circumstantiality, and (6) incoherence. We have given extreme instances of each of these types so as to make clear the distinctions between them. All of these forms exist in very mild degrees as well as in the most extreme. There has been too great a tendency to ignore the milder deviations from the normal, to wait until the extreme manifestations appear, and then to observe in amazement the queer antics that a person can perform in his mental

¹ Reprinted by permission.

life. The time to do remedial work in this connection is undoubtedly when the tendency is beginning.

178. **Abnormal association constellations.** Mental processes are influenced not only by the sequence of associations but by the way in which the different associations become grouped and related. A great portion of the effort of education is directed toward creating rational groupings of association, but in spite of all the educational control we all tend to form irrational groups, which have just as vital an influence upon our thinking as do the rational groups. In presenting the different types of constellations, we do not wish to give the impression that they are rigidly fixed. They are continually changing, and for this reason the presence of a peculiar constellation or grouping of associations is not a serious matter unless it becomes so established that the owner will not permit it to be modified. When we refuse to permit changes in our association constellations, we deserve to be classed as "old fogies," regardless of our actual chronological age.

1. *Perseveration.* When a response has once been given, if this same response tends to be repeated to other stimuli, we have what has been called *perseveration*. In mild form this symptom may be the result of a persistent attitude or emotion. A more serious form is likely to occur where there is a coarse brain lesion and is usually a sign of definite deterioration. Suppose you ask a person showing this symptom, "How old are you?" He may reply, "Forty-four." Whether the reply is correct or incorrect is not important in this connection. The conversation may be continued as follows: "What day of the month is it?" "Forty-four." "When did you come here?" "Forty-four." "How many children have you?" "Forty-four." "How much do you weigh?" "Forty-four." This may be continued indefinitely until you ask some question that is far removed from any number relations, such as, "What is your name?" It can be seen that the main characteristic of perseveration is persistence of a motor expression of some word or words.

2. *Stereotypy.* In stereotypy the actual motor expression may vary, but all the verbal expressions hinge upon some central theme in a very mechanical manner. An example of the production of a patient with stereotypy is the following:

"I am a dry goods merchant and I want to go to town and work in my mother's dry goods store. Give me my hat, my coat and my gob-sticks, for I am going to go to town and work in my mother's dry goods store. I am a dry goods merchant and I work in my mother's dry goods store. Open that door and let me go to town and work in my mother's dry goods store."

This would be kept up for hours at a time with slight variations. If you had tried to interrupt, you would not have been very successful. For instance, suppose you had said, "Well, —, you look pretty well this morning, are you feeling fine?" You would probably have received the reply, "I am feeling fine, for I am a dry goods merchant and I am going to town to work in my mother's dry goods store."

3. *Fixed ideas.* The term *fixed idea* is used to designate those associations which tend to persist to a great degree, but which are so moderate that they are neither undesirable nor regarded as pathological and which harmonize with the other mental associations and ideals of the individual. One recognizes the tendency of such ideas to persist but is not usually disturbed thereby. Sometimes the fixed ideas are a direct result of some immediately preceding experience and the fixation may then wear off in time. In other cases the fixed idea becomes a definite part of the person's make-up and plays a large part in determining his reactions to different situations. Ambitions are fixed ideas of this latter sort. Hence, a fixed idea may be a spur to conduct which is to the advantage of the individual.

On the other hand, a person may have a fixed idea of undesirable affective value, such as the idea that some particular individual dislikes him. If such an impression takes too strong a grip upon the person, especially if it goes beyond the realm of reasonable truth, it can no longer be classed as a fixed idea. It then becomes a delusion, a type of disorder that will be considered in the following chapter.

4. *Obsessions.* An obsession is an idea which has an undesirable affective tone, which the possessor recognizes as abnormal in strength, which he tries to banish, but which persists until the sufferer develops a feeling of subjection to it. One complaining of an obsession will tell you that he knows that the thing is foolish, that he has tried to get rid of it, but that it persists in dominating his thinking.

The term obsession has been very loosely used in psychological literature. With some writers it has been synonymous with a phobia, or abnormal fear. Some have identified it with a compulsion, which is an irresistible tendency to perform some act. We believe it would make for clearness if the term *phobia* were used exclusively for the persistent fear, *compulsion* for the irresistible act, and *obsession* for the persistent association as just defined. To be sure, all three often appear together. For example, suppose a person had the idea persistently present that his hands were dirty. If, in spite of repeated washings, the idea kept recurring to the extent that it interfered with his work and annoyed him, it would be an obsession. If he feared lest they become dirty and constantly guarded them against contamination this would be a phobia, a fear of contamination. If he had an irresistible impulse to wash them continually this would be a hand-washing compulsion. Hence the three terms describe three different aspects of such an individual's condition.

Some obsessions take the form of continual propounding of sometimes abstruse and sometimes absurd questions. "Who am I?" "Why has a chair four legs?" "What existed before the creation of the world?" "Where is the end of the universe?" "Is there a God?" "What is mind?" These questions keep obtruding themselves to such an extent that the sufferer cannot do any rational thinking or any fruitful work. His problem is not how to answer these questions but how to get rid of them.

XXXIX. SYMBOLISM

Many of the subtler things in life are expressed not directly, but in the form of symbols which serve a double purpose: to make the situation more striking, and to take away some of the undesirable elements that might be present. Since the use of symbols is especially frequent in various forms of mental disorders, the student of psychology needs to know the nature and purpose of symbolism in order to interpret conduct. At the same time he must learn not to place too much confidence in his interpretation of symbols because their meaning depends upon the individual who uses them.

179. Nature and use of symbols. A symbol is something that stands for something else and serves either to represent it or to bring to mind one or more of its qualities. The basis

for the symbolic relationship is the perceptual experience of the individual. We respond to a situation as a whole. When, later, one part of the situation is presented, we react to this part in somewhat the same manner as we previously reacted to the whole. We take the part as a cue. Life is filled with such symbolic relationships. Language is largely based on this principle. A man's name is a symbol for his whole personality. A flag stands for the nation and all that the nation represents. Sometimes the symbolism becomes more abstract—white stands for purity, a mountain peak for achievement.

The oak suggests sturdiness, ruggedness, and strength of character. It has *limbs*, *trunk*, and *heart*. A fellow citizen of rugged character, dependability, and strength of purpose is said to possess a *heart of oak*. Spring foliage represents inexperience (verdancy); brown and yellow, decay (the sere and yellow leaf). Stone is a symbol of hardness, and there are correspondingly *hearts of flint*. The ascent of a river and the exploration of a cave are begun from the *mouth*. (Burr, 11)

From these illustrations it is apparent that the symbol is a simple way of expressing relationship or comparison by substituting one thing for another. Since these symbols are usually based on experiences that are common to all, there is in the human race a fair degree of uniformity in their use. They are used because meaning becomes more striking when made concrete than when expressed in abstraction. The reason for this is that abstraction deprives the concept of the affective value inhering in specific experiences, and to give our statements or thinking perceptual value invests them with the affects that accompany sensory experiences.

The following bit of verse illustrates this:

Mother calls me Willie;
Sister calls me Will;
Father calls me William;
But the fellows call me Bill.

Here Willie is a symbol of affection, Will a symbol of primness, William a symbol of sternness, and Bill a symbol of friendship. The symbolic expression of the attitudes of the people in the poem toward the boy is much more striking than the abstract expression of them would be.

180. **Emotions concealed by symbols.** Specific perceptual situations often have powerful emotional values, both pleas-

ant and unpleasant. Symbols often serve the purpose of covering unpleasant feelings or affects. When we wish to refer to an unpleasant situation, we use a symbol which effectively covers the undesirable elements. Language symbols conceal as well as elucidate.

Much of the speech and conduct of mentally unadjusted individuals, both children and adults, is of the symbolic sort and can be understood only when it is clearly recognized that the symbol is designed to cover some painful personal situation. Often the patient himself does not realize the significance of his use of such symbols and cannot be accused of a conscious attempt to conceal. He covers that which is shameful to him just as habitually as we cover our bodies with clothing.

181. Symbolic interpretation of behavior. When we attempt an analysis of hallucinations, delusions, and bizarre conduct, we shall be better able to see the significance of these various forms of abnormal life if we are not blinded by accepting too literally what the patient says and does. We must learn to see what the words and conduct symbolize. A word of warning needs to be sounded here, however. We have found that the student, learning the significance of symbolism, wishes to secure a key by means of which he can *translate* the conduct of the abnormal person much as he translates a passage of a foreign language by means of a dictionary. No dictionary of the meaning of symbols would be adequate for this purpose. The meaning has to be derived from the context—the experience and life of the patient. For example, when a boy creates a disturbance in the classroom, the teacher should not be too quick to interpret his action as pernicious; it may symbolize his urge to obtain recognition that has been denied him. When a person hears a voice calling him vile names, it may represent a striving to be different in character from that implied by the vile name. When a person gives his life to the reformation of others, it may symbolize a striving to be himself what he tries to make of others, coupled with a fear that he might not be able to excel in this respect. Such symbolic interpretation should always be carried out with the aim of getting a true understanding of human motivation and not with an attitude of disparaging criticism.

Our discussion has shown us that symbols are used when the ideas they represent are highly emotional in nature. The symbol may hide the undesirable features of the idea, express it in a beautiful way, and thus offer a highly pleasing substitute for what might be a distasteful acknowledgment of the real nature of the idea. We have shown that the associations upon which symbolism develops are specific experiences rather than the result of inheritance. In so far as the experiences of people are the same, we may hope to find a common meaning in symbols for different persons. But we have also indicated that no two persons have identical experiences, and so symbols will differ in significance and form with different individuals.

XL. SIGNIFICANCE OF ABNORMAL ASSOCIATIONS

Thus far we have confined ourselves to an objective description of unusual association groups. When we examine the flow of associations, we can determine whether the individual has a dearth of ideas, whether he manifests retardation, blocking, flight of ideas, circumstantiality, or incoherence. When we examine the constellations of associations, we can state whether he has perseveration, stereotypy, fixed ideas, or obsessions. But these descriptions, essential though they are, tell us nothing of the reasons why associations take these peculiar forms. We now wish to proceed to an analytical study to see whether these symptoms have a definite meaning in relation to the personality of our subject, and what remedial and preventive measures might be applied.

182. **Neurological explanation.** The neurological explanation would trace all abnormal associations to some organic disturbance of the nervous mechanism. If a disease organism causes deterioration of portions of the nerve substance, this deterioration will obviously interfere with the normal functioning of the nervous system. The prime work of the nervous system is to carry messages and hence, if the pathways are broken or otherwise interfered with, disordered associations will result. There is no gainsaying this, and some types of association disturbance can be traced directly to such causal factors.

There are two arguments against referring all such disorders to an organic background. The first is that there may be profound disturbances of association processes with no neural lesion sufficient to account for them. This is answer-

able by the statement that the lesion might be there without our being able to discover it. This might be a strong argument were it not for the second main objection against too great an emphasis on the neurological explanation, which is based upon the fact that, in experiments where large portions of the nervous tissue have been destroyed, the disturbances of association processes have been disappointingly small. Furthermore, after extirpation of small portions of the cortex in animals (Lashley, 31 and Franz, 15) re-education has been surprisingly easy to accomplish. For example, after removing enough of the motor area from the cortex to cause a paralysis of one paw, monkeys were trained to use the paralyzed paw with as great efficiency as before the operation. Indeed, re-education is a much more hopeful process in cases of minor organic disturbances than re-education of one with an obsession or fixed idea. The latter mechanisms must be approached from the functional viewpoint. In studying the cause of organic disturbances of association, the examiner endeavors to discover why certain pathways have been broken. The peculiar behavior is always regarded as the result of disturbance of conduction. In studying the cause of functional disorders of association, the emphasis is placed on the reason for the peculiar constellations of association that exist. How did they come to be grouped as they are? Why do they tend to connect in the peculiar manner that they do?

Investigation of peculiar association constellations has shown that these are largely determined by affective factors. We have already indicated that associations are not solely dependent upon the conditions of recency, frequency, or vividness but upon the emotional tone of the component elements. This is true in normal associations, but in abnormal ones the affective element comes to play a more and more important part.

183. The complex. The fact that emotions can play a prominent part in the linkage of association pathways has led to the formation of the theory of the complex. A complex may be defined as a system of ideas and attitudes held together by certain affective ties. If a man dotes on taking pictures, he

has a photography complex; a baseball fan may be said to have a baseball complex; an ardent socialist has a political complex. Note that there is not necessarily anything abnormal or unconscious about such a complex.

Hart (21) is largely responsible for the broad conception of complex as applied in our definition. He defines it as any "system of emotionally toned ideas." This includes any grouping, from such a normal and mildly toned constellation as is ordinarily described as a sentiment, to such an exaggerated grouping as is found in an obsession. Furthermore, the possessor of a complex may be either aware of its presence or totally unconscious of its existence.

Another view is that complexes are bound up with emotions of an unpleasant sort, often highly undesirable, and are thus distinguished from other emotional constellations. If this distinction is to be maintained, it becomes a very undesirable thing to have a complex. But how are we to determine whether a complex is wholly undesirable or not? Often it partakes of both good and bad qualities.

For this reason it seems best to take Hart's broad conception and let a complex represent any emotionally toned grouping of associations whether they are pleasant or unpleasant, conscious or unconscious. If we do this, a complex has no mysterious halo but can be looked upon as the functioning of definite psychological processes.

The student should be warned against making a fetish of the term complex. Its importance has led to a tendency to refer to it as though it were some mysterious thing which gained entrance to the individual and operated through him. There is nothing in the complex that is foreign to the personality of the one possessing it. It is simply a term to indicate that, because of certain experiences, the component associations centering around one theme have become very closely united and are held together by some dominant emotion. They are formed much as any bond is formed—by learning, by experience. However, the main distinction between a bond knit together by an affective tie and one formed by the ordinary laws of learning, such as learning that two plus two equals four, is that the number of repetitions necessary to

form the affective connection is much fewer than the number required for learning the non-affective bond.

184. The development of a complex. A complex is based on the simple principle that the elements or parts of any experience with strong affective background are bound together more strongly than those without such affective support. Let us give a simple illustration of how this operates. Castor oil has an unpleasant taste, and any child who is forced to take it has a strong emotional reaction. This reaction is not directed solely toward the castor oil but comes to embrace anything related to it. For example: A mother, in order to mitigate the unpleasant taste, gave her son a dose of this noxious substance in orange juice. The next day she prepared some orange juice for her boy and was surprised when he refused to drink it, for he had always been very fond of it. When asked the reason for his refusal, he said that it tasted like castor oil. This is the mechanism of the conditioned reflex, but whereas most conditioned reflexes take several experiences to fix them, it took only one experience to form the connection between orange juice and castor oil because of the affective factor. Some time later this same boy informed his mother that he disliked a certain cosmetic she used because, he insisted, it smelled like castor oil. In other words, this boy had a castor-oil complex which made him link together all things that had any associative relation to the medicine he so thoroughly hated. Furthermore, it is possible for such an antipathy to influence the child in ways that he does not so clearly recognize. Later in life he may find himself disliking some person or thing with no apparent cause, but in reality it is because this person or thing in some way relates to the castor-oil complex he acquired in early childhood.

This simple illustration shows the mechanism whereby the complex operates but gives a very inadequate conception of the scope of affective determination of associative trends. We have few experiences that do not have an affective component and, when we consider that the elements of each experience are conditioned by the affect as well as by simple temporal and spatial relationships, we can see why our associations follow emotional rather than logical patterns.

Let us take another example, not so simple, such as the person who is an ardent socialist and has a political complex. We may not be able to find such a simple process of conditioning as that described above. The experiences that led to his becoming a socialist may have been many, varied, and may have occurred at many different times. They must have been such as to have involved him emotionally. He may have grown up among people who were socialists and became attached to this political system through a sort of "social heritage." He may even have become a socialist as a defense or reaction against what he regards as injustices in his environment. In this case, not only would there be emotional involvement, but, as some would say, his ego would also be involved. All these are conjectures, but they should reveal the intricacy of the development of a complex. There is no doubt that once the complex exists, the socialist will react to political questions in accordance with it. His reaction may or may not resemble a rational and reasoned approach. In other words, his associations will in part be determined by those experiences that have crystallized in the form of a complex. He now has a sort of frame of reference of which he may be aware, to be sure, and at the same time he may feel that he is being perfectly logical and reasonable in making all his political decisions. He may not make the connection between his being a socialist and his opinions on certain political issues, i.e., he may feel these are reasoned opinions, not having anything to do with the way he votes in an election. Thus he is in a way unconscious of the effect of this complex on his behavior. This example is of a normal complex similar to the kind possessed by many people. Sometimes the complex concerns more abnormal things and causes associations that are also abnormal. We shall have occasion to see some of these later.

XLI. METHODS OF STUDYING ASSOCIATIONS

The method to be pursued in analyzing associations, in the light of what has preceded, is to unearth the emotional element that binds some associations together and keeps others apart, rather than to discover logical relationships. The recognition of the importance of the affective determination of association relationships has led to a technique designed to bring out the significant emotional attitudes in the individual. A pioneer in this field was Jung. Following his work, a method has

come into popular favor known as *free association*. Various procedures have developed from this method, but they are all based on the general principle that a study of the way in which different ideas are related in the individual will throw light on some basic factors in that person's personality.

185. **The discrete-stimulus method.** Two varieties of the discrete-stimulus method have been used. The first, the one used by Jung himself, consists of an analytical study of the significance of the individual associations. The second is the statistical method developed by Rosanoff. We shall take up these two in turn.

1. *Jung's analytical method.* Jung used a list of one hundred stimulus words¹ chosen and arranged in such a manner as to strike most of the common emotions. The method is about as follows: The subject is told to answer each word with the first word that comes to his mind. The examiner records the response as well as the time required for the response to each word. If the stimulus word is not connected with an emotional complex in the individual, he will be able to respond quickly with some other word, usually a word that has become related to the stimulus word through experience. For example, common stimuli and reactions are:

<i>Stimulus word</i>	<i>Reaction</i>
table	chair
window	room
head	hair
bread	eat
grass	green

Various types of response have been regarded by Jung as indicative that the stimulus has aroused an emotional response. Most normal persons in a test with one hundred words show some of these reactions to some of the words. Too many unusual reactions indicate an unstable person. Further, an analysis of the specific unusual reactions may give some sort of indication concerning the complex or com-

¹ Jung's list of words were in German. English equivalents may be found in the following sources: Jung, C. G., "The Association Method," *Amer. J. Psychol.*, 21 (1910), 220; and *Analytical Psychology*, Moffat, Yard Co., 1916, pp. 94-95.

plexes that are disturbing elements. The reactions that are supposed to be complex indicators are as follows:

(a) *Delayed Reaction.* A delayed reaction to a stimulus word indicates that a complex has been touched. Jung ascribed the failure to respond to an emotional blocking. The subject is disturbed just as he would be in an actual situation in which he was emotionally upset. A person who is excited cannot think, not because he is incapable of thinking, but because the excitement interferes.

For example, a girl, given the stimulus word "health," delayed a long time and finally reported "strong." The pause, being regarded as significant, led to inquiry as to the girl's attitude toward health, and it was found that she was very much concerned with this idea. Her aunt had tried to impress upon her for years that she was not strong, an impression she had fought with great zest. The pause in reaction had indicated a very delicate emotional situation.

(b) *Multiple Response.* A response, not with one word, but with many words shows inability to control reaction because of their affective value. Some examples of this type of response are:

<i>Stimulus</i>	<i>Response</i>
to quarrel	angry—different things—I always quarrel at home.
to marry	how can you marry?—reunion—union
plum	to eat—to pluck—what do you mean by it?—is it symbolic?
to sin	this idea is quite strange to me, I do not recognize it.
finger	hand—not only hand but also foot—a joint—member—extremity
white	color—everything possible—light

The assumption here is that the stimulus word gets the subject excited. He responds quickly with a word that he fears may give the experimenter some clue as to his excitement, so he attempts to cover his confusion with other responses. We are all familiar with the way persons chatter to cover their confusion.

(c) *Personal reactions.* To give a personal response to an

objective stimulus shows a tendency to extend the ego, which is a quite characteristic response when a complex has been tapped. The following illustrate personal responses:

<i>Stimulus</i>	<i>Response</i>
to dance	love it
luck	don't believe in it
money	poor, wish I had some

(d) *Repetition of the stimulus word.* When we hear a difficult question, we are likely to repeat it in a puzzled manner to grasp it better before replying. Repetition of the stimulus word in the association experiment is supposed to indicate that the word has struck some complex and that the repetition is a defense, a pause to regain poise before a response is made. Closely related to this is the tendency to hear the word incorrectly or to give it some interpretation different from the obvious or usual one.

(e) *Perseveration.* In some tests it may be observed that the same response appears to the most varied stimulus words. This indicates that there is a dominant complex which many irrelevant words set off. For example, in the list of one hundred words referred to before, one of the writer's patients gave the response "long" ten times and to stimulus words not at all logically related to the word. Further investigation showed that the word "long" was related to her difficulty. She and her husband had worked for a *long* time to save money to build a home. When they had begun to build after this *long* period of waiting, they had lost their money. Now they would have another *long* siege before they could again hope to build. But she was getting old and it would not be *long* before she would be too old to enjoy a home. This theme occupied all her thinking. Is it any wonder that "long" should crop out in an association test?

(f) *Superficial associations.* When a stimulus word strikes a complex, the subject may defend himself by responding with a superficial association, that is, a chance response that obviously has little or no associational relationship. For example, the subject may name anything that is in sight, such as:

<i>Stimulus</i>	<i>Response</i>
head	wall
green	paper
water	window
to sing	sill
dead	pane
long	glass

Here the subject is obviously selecting in advance some object in his environment which he names regardless of the stimulus word.

(g) *No response.* Probably as significant as any of the complex indicators is the failure to respond at all. When the patient waits a number of minutes and finally says that he cannot think of a thing, it is fairly good evidence that a definite emotional blocking has been encountered.

(h) *Failure of reproduction.* It is common practice to go through the entire list of one hundred words a second time in order to determine the number of responses that are different on the second trial. Jung (25) contended that when a response is different on the second trial it indicates that an emotionally accentuated complex has been touched. A person very easily forgets what he has said under an emotional stress and is even apt to contradict a statement so made. On this fact the efficacy of cross-examination depends. Jung states that in his experiments a normal person has not more than 20 per cent different responses on the reproduction test, while abnormal persons have from 20 to 40 per cent.

(i) *Accessory emotional reactions.* If the subject stammers, blushes, clears his throat, sighs, weeps, laughs, acts surprised, or evinces an emotional reaction of any sort, one can feel sure that a complex has been touched off. The meaning of the particular emotional reaction is not usually apparent, however, and one should use care in drawing an inference from such concomitant emotional reactions.

Jung's method is primarily analytical, and the information secured from the patient's association is used to throw light upon the nature and significance of the different complexes that the test uncovers. It must be recognized in such work that the normal person has a number of complexes and that

it is very likely that these will be tapped by such a test. What the test does is to indicate whether or not the person has an unusually large number of complexes, and furnishes a lead for further investigation. The adequate use of this method requires considerable skill. The examiner should beware of hasty generalizations from a few responses.

2. *Rosanoff's frequency index.* A second method of applying the discrete method of association was developed by Kent and Rosanoff (27). They gave a list of one hundred stimulus words to 1000 subjects, tabulating the responses of each. The frequency tables based upon this experiment indicate which are common reactions and which are uncommon. Jung's method had been one of analysis. Rosanoff's method was empirical, that is, it involved the experimental rather than the analytical study of the responses. The empirical method gives a much more valid means of evaluating responses. We can argue from subjective analysis that a certain response is the most common, but the empirical method gives the final justification to our reasoning. Kent and Rosanoff have published tables giving all the responses that were made to each word together with the number of times that each response was given.

186. The continuous-stimulus method. This method is sometimes called the chain-association method. The subject is given a certain stimulus and is told to respond with the first idea that comes to his mind, and then to continue to use each response as a stimulus for the succeeding response. For example, the subject may be instructed to begin with "table" and to give the first word it suggests, and then without interruption to give the next word that comes and the next, and so on. A series of chain associations to "table" might be: chair—wood—forest—green—grass—soft—bed—cover—warm—cold—snow—sled—Christmas—etc.

Even a normal person will not proceed very far with such a chain-association series before he comes to a block. He cannot think of anything else to say. This blocking is supposed to indicate the presence of an emotion. In other words, the chain of associations has finally connected with some complex of an undesirable sort, and the inability to give any response indicates that the subject has built up a resistance or an in-

hibition against permitting the complex to come to the focus of attention. If this emotional block is pronounced enough, the individual will be altogether unable to proceed and the examiner must get him to make a fresh start with a new stimulus. It is quite likely that a subject will eventually strike a complex of some sort no matter from what stimulus he starts. In many cases the emotional resistance is not great enough to produce a complete block, and the subject, after hesitation, can proceed until he strikes another emotionally toned idea. If the trend of associations assumes a new direction from this hesitation, the pause is just as significant as a complete block. Only when the inhibition is very pronounced does the subject come to a complete standstill.

By this process the subject may make diverse approaches to a certain complex that is giving him trouble, coming to an abrupt stop at each approach. If this is continued, it is possible that eventually the inhibition will be overcome and the complex brought to attention. In this way the subject may learn about associations in his mental life which he previously did not consciously recognize.

This method has another advantage. It shows the experimenter the types of ideas that are related in the life of the subject. Politics, sports, love, religion, business, scandal, or a host of other interests easily become manifest by the use of this method.

From a description of the continuous, free-association method it may appear as though it would be easily administered, but it is extremely difficult. In all our associational life, whether we are following these processes silently or aloud, we have learned to exert certain controls or inhibitions. We repress certain associations and welcome others. The success of the free-association method depends upon relaxation and the uncontrolled succession of associations. If the subject cannot relax, the associations will not come freely. But when an examiner is using this method, he should not be so much concerned whether or not the subject is giving a free series as with the nature of, and associations related to, the blocks. The fact that the subject stops and the direction his associations take from these stops are significant. Mere speed and seeming freedom in giving associations may not be the im-

portant factor, for a person may be very glib in associations in a certain field in order to keep from getting into associations of an embarrassing or unpleasant character.

This fact was strikingly brought out by one of the senior author's patients. We had been using free-association methods with this young man for weeks in an endeavor to unearth the root of his difficulty. He would start from any stimulus word and give an almost uninterrupted chain of associations which, with the ordinary mortal, would be connected with all sorts of emotional disturbances. He seemed to have absolutely no emotional responses to any of these and his symptoms did not disappear. We knew that, in spite of this seeming disclosure of crude and even vile associations, they were not connected with his trouble. In fact, we became suspicious that he was making his associations obscene in order to cover up the significant ones, as a defense reaction.

Consequently, we connected a galvanometer to his fingers in order to ascertain when he did have an emotional reaction. The galvanometer¹ was in an adjoining room and an assistant gave us a signal when the galvanometer registered. The subject glibly gave us his customary train of associations, but there was no movement of the galvanometer. After continuing for ten minutes, he suddenly stopped, as though weary, whereupon the galvanometer began to register violently. Then he said, "What are you trying to do to me?" From this point he wandered off in another direction, talking about the possibility of one person influencing another. Whenever he talked about personal influence he gave an emotional reaction, as shown by the galvanometer. This was a line of associations that had not come forward as significant before, but now proved to be very significant for his case. He had been disturbed by a fear of being unduly influenced by others and this proved to be the root of his trouble. All his previous obscene associations had simply served to conceal the really significant ones.

While the chain association is presumed to arrive at some emotionally toned complex no matter what the point of origin, the subject is likely to arrive at a block much more

¹ With any emotional change in the subject, a sensitive galvanometer, connected with electrodes on the subject's body, will indicate a change in electrical potential.

quickly if he is started from something that is fairly certain to have a relationship to his dominant complexes. For this reason it has been the custom of examiners to start subjects with what they think is a significant stimulus. For example, they will take some element from the dream life and get the patient to associate from there. Or, they will begin with some word which has evidently embarrassed the patient. A common method is to combine the discrete-stimulus method with the chain-association method, somewhat as follows: After the list of a hundred words has been given by the discrete-stimulus method, the examiner gathers together all the words that fell into the category of complex indicators. The subject is then given these words as stimuli for the chain-association method.

187. **The Rorschach test.** The Rorschach (38) test is a special development of the ink-blot test. The ordinary ink-blot test has not yielded very significant results heretofore.

Rorschach, some years ago, developed a series of ink blots that have been more successful than those previously used. The blots were made as follows: Some blots of ink were made upon a sheet of paper and this was folded and the blots pressed out between the two sides of

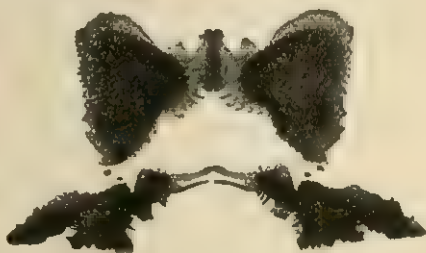


FIG. 11.

Symmetrical ink blots similar to those used by Rorschach.

the sheet. When the sheet was opened the result was a symmetrical figure. He chose ten blots made in this manner that were relatively simple, that fulfilled the conditions of space rhythm, and that could be interpreted as a picture and not as a mere blot. The first picture of the series was made of black ink only, the second and third had red as well as black ink. The fourth, fifth, sixth, and seventh had black ink only. The eighth, ninth, and tenth had red, yellow, green, and blue as well as black ink. A typical ink blot of this sort, although not one of the standard Rorschach series, is shown in Figure 11.

The method of administering this test is as follows: The subject receives the mounted ink blot in his own hand and

the examiner says: "What can this be?" The subject may turn and twist the card at his discretion. He holds it in his own hand and so is free to move it to arm's length or close to his eyes. He is not permitted to set it down and walk off to get a distant view of it.

The great value of this means of eliciting free associations is that it provides a standard situation that can be duplicated with all subjects while at the same time it allows for a great degree of spontaneity on the part of the subject. He does not feel under constraint, and therefore he is more likely to give free associations than he is to word stimuli. Words always have a conventional value. These ink blots do not possess conventional significance, which is, no doubt, an advantage in eliciting free associations.

Another advantage of the Rorschach test is that the subject does not suspect your real motive in giving the test. Not being on his guard, he is more likely to be spontaneous in his responses and thus give reactions that will be of great diagnostic significance. The test may be given to children, uneducated and psychopathic patients, as well as to relatively normal subjects.

Much work of a statistical and empirical nature has been done in the past ten years or more in establishing the validity of the scoring system of the Rorschach test. As stated above, one of the chief advantages of the test is that it provides a standard situation for all subjects and at the same time provides a maximum opportunity for patients to provide their own associations unhampered by the structure of the ink blot. While every Rorschach test must be scored in a somewhat qualitative fashion, empirical work of several investigators (Beck, 8; Klopfer and others, 30) has shown what kinds of responses normal and abnormal patients will give. We should say it is possible to know something about the pattern of responses that may be given, for in the Rorschach, the examiner always looks at the total configuration of associations as well as at the individual responses. This is not the place to consider the complicated scoring system that has been worked out, nor can we refer to the very extensive literature on the Rorschach test. While some of this work has been inadequately controlled, there is sufficient evidence

that the fundamental basis of this form of projective measure is of sound value in psychological diagnosis.

188. **Thematic Apperception test.** Somewhat related to the Rorschach is the Thematic Apperception test of Murray and his associates. In this test pictures of varying degrees of "structuredness" are presented to the subject, and he is asked to tell a story about each or to give his associations to them. These pictures are in black and white and gray and represent a good sampling of various situations which can call forth a great variety of associations in the patient. It, too, must be carefully scored by someone well acquainted with the technique. Other methods of tapping associations through the use of projective techniques will be mentioned in the chapter on psychotherapy.

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CHAPTER VIII

MEMORY DISORDERS

Since memory disorders cover a very wide range of peculiarities, we should become acquainted with the different forms they may take, and understand the relation of each to the total memory process. We shall find that not all memory deviations are caused by a definite organic disturbance but may be remedied by dealing with other aspects of the mental life. The analysis of memory disorders is made relatively easy because of definite methods that have been devised for testing memory.

189. Examples of memory disturbance. Fred Wagner was an average college student who had had no trouble with his studies until his father died. His mother was left to clear up some debts that the family had no previous knowledge of. Being a conscientious woman, she set out to work, even though she was in her fifties and not in too good health. She had many difficulties which she let Fred know about while still insisting that he must stay in college, that she would sacrifice so that he could, in fact. He felt that he would be better off to get the family affairs in good shape and then to worry about his education. These matters so worried him that he went down in his work seriously enough to be asked to leave college. His chief complaint was that he could not remember anything he read or studied. He had no trouble understanding it but had real difficulty in remembering. Really, of course, he was not learning and consequently could not very well remember.

An insurance man went on a hunting trip with friends. One morning he went off by himself into the woods and after a short tramp without any luck he decided to take a short nap. When he awoke he did not know where he was nor what he was doing with hunting equipment. He could not even remember his name but assumed it must be the one on the case of the gun (a borrowed one). He walked off through the forest until he came to a highway where he "thumbed" a ride with a trucker. He still could not figure out what he

should be doing nor where he should be going. He finally stopped in a fair-sized town and got a job as a statistician in the city offices. He worked at this job for a number of months, well over a year, and was becoming well known around the city offices. One day he saw the picture of a man in the newspaper whom he thought he ought to know. He could not get rid of the idea that he ought to know that man; it seemed so sure to him that he wrote to find out, giving his occupation, age, and stating that he was not sure about his previous history. The pictured man proved to be his insurance partner who investigated and discovered the identity of the writer. Gradually the man's memory returned and he was able to return to his former business. This is an example of a memory disorder known as a *fugue* and is akin to the psychoneurosis known as *hysteria*.

A veteran of World War II was bothered by an inability to concentrate, by night terrors, insomnia, irritability, hypersensitivity to slightly loud sounds, and a confused, dull feeling. He could remember much about his life in the military service and thought he remembered all the important happenings. Psychotherapy with the young man, however, helped him to remember several incidents of such a horrible nature that he had forcefully forgotten about them. Two of them involved his seeming cowardice, about which he had severe guilt feelings. A third was not military at all but concerned sexual experiences about which he also had strong feelings of guilt. He could remember none of these without special help from the clinician.

These are all examples of disordered memory which we shall wish to consider. The first and last are relatively common, while the second one is much more rarely found.

XLII. NATURE OF MEMORY

The understanding of memory disorders depends upon a clear conception of the nature of the memory process. Memories are not concrete objects but are expressions of changes that have taken place in the nervous organization through experience.

190. **Definition of memory.** In a general sense any modification of the organism resulting from experience may be considered memory. Since the whole of psychology is a study

of such modifications, memory is fundamental to all our study. Popular usage does not give this broad meaning to memory—it limits it to those experiences that can be recalled. Many incidents that we do not recall have left their mark upon us. When we learned to walk, if we are to judge from our observations of children during this process, we undoubtedly stumbled and fell many times. We cannot remember when we tried to walk nor the particular falling incidents, but such experiences have left their traces upon our personalities. Forgotten as are the trials, errors, and successes of our learning to walk, nevertheless our present ability to walk is largely the result of the residual effect of these forgotten incidents.

Between the things or incidents that we can recall and those that we forget, there is no sharp distinction; and, as we shall shortly discover, some things that seem to have been totally forgotten may be recalled under certain circumstances. Consequently, the limitation of memory to what can be recalled, although this conforms to popular usage, gets us into severe difficulty in our thinking, if the latter is to be critical and competent. It is probably better to accept the broader conception of memory. Memory may be defined as any experience that is conditioned upon earlier experiences of the individual.

191. Permanence of memory traces. How permanent are the modifications caused by experience? Some thinkers, notably the psychoanalysts, make the claim that every experience leaves its permanent impress. The reason some impressions seem to fade is that they become so overlaid with other experiences that they are relatively inaccessible, and only under favorable circumstances may they be brought back. Another group of psychologists presents the theory that the passage of a nerve current leaves its trace in the nervous system but that this modification, if not exercised, gradually grows less marked until it may disappear altogether.

The former view is based on evidence procured from individuals who have been able to recall with great detail incidents that apparently had been totally forgotten. Such evidence does not prove that, even in these recalled incidents, there has not been some weakening. But these cases of unusual

recall do show that we have been too prone to emphasize the factor of time as dominant in determining the strength of a memory trace, and consequently we have had to search for factors other than the weakening of neural bonds in order to explain losses of memory.

On the other hand, experiments with rote memory, notably with nonsense syllables, have shown rather conclusively that a simple connection does lose its force if not practiced. Because the associations between these nonsense syllables are not very intimate, they have furnished a good medium for studying the way in which connections fade out with time.

192. Memory a complete process. Both of these viewpoints are based on the assumption that memories are isolated portions of experience and that recall involves lifting them from their setting and viewing them in more or less isolation. Quite the contrary is the true state of affairs. Every experience is an exceedingly complex affair, dependent upon a multiplicity of factors and causing a response combining many components of activity. It is literally impossible to revive any experience in exactly the same form. Hence, if we experience some incident but once, its recall will be modified by the setting in which a similar experience occurs. If the incident is repeated in relatively similar settings, the recall may attain a uniform pattern, but if it is experienced only in diverse settings, recall of the experience will be variable and approximate.

The inaccuracy with which we report a single event, such as an accident, demonstrates the approximate nature of recall based on a single experience. On the other hand, we are able to recall exactly "two plus two equals four," merely because we have repeated the formula so uniformly that there is no possibility of divergence in recall. Between these two extremes there exist all degrees of exactness from the sheerest approximation to the utmost precision.

These facts have been confirmed by experiments upon memory. In memorizing passages of prose, for example, accuracy of reproduction is the exception rather than the rule. With one repetition, the form, outline, and general chain of associations are maintained with fair accuracy; but the style, rhythm, and precise mode of construction are changed. With

frequent repetitions, the form and items of remembered detail quickly become stereotyped and thereafter will suffer little change. (Bartlett, 4)

In view of these facts, discussion about either the retention or the loss of "memory traces" holds little significance if we mean simple impressions having precise localization in the nervous system. Recall will depend upon the total experience in which it occurred, the similarity of the setting of succeeding experiences with the first and with each other, the condition of the organism, as well as upon the ability of the person to reproduce faithfully the total setting.

193. Conscious and unconscious memories. An experience may affect future behavior even though it may not be consciously recalled. For example, suppose a boy, in strolling across a field, is confronted by a bull and is violently thrown over the fence by the animal. Suppose, in addition, the boy has a feeling of guilt relating to this incident, of such force as to make him wish to forget it. Such a guilty feeling might lead to a complete blocking against any conscious recall but the effect of the experience might still persist and modify his behavior. Later in life he may manifest fear of a bull, running away from it, without the slightest conscious recall of the incident which established the fear. He has been changed by his early experience but, at the moment at least, does not recall it consciously. Should he be able to recall the incident, it would thereby become a conscious memory. To bring to conscious recall the hidden memory should be the aim of the clinician who has to deal with such a seemingly unlearned fear.

This distinction does not divide memories but merely indicates a temporary condition. A memory that at one time is not conscious may become conscious; and again, a conscious experience may for a time become unconscious. The important consideration is that mere fading from consciousness does not destroy the influence of the memory.

Most of the peculiarities of memory are concerned with the manner in which memories pass from the conscious to the unconscious and *vice versa*. An understanding of the principles underlying these transitions will take us far toward the analysis of a great many perplexing mental problems.

XLIII. FORMS OF MEMORY PECULIARITIES

Disorders of memory may take many forms. In this section we shall discuss exaggerated memory, some peculiarities of recall, disorders of recognition, retrospective falsification, and confabulation. We shall reserve memory losses, such as amnesias, for a later section.

194. **Exaggerated memory.** Exaggerated memory is called *hypermnnesia* and may be found in two forms. The first form, or general hypermnnesia, is unselective and affects all memories more or less indiscriminately. The second, specific hypermnnesia, is the peculiar exaggeration of a specific group of memories.

1. *General hypermnnesia.* Emotional stress, fever, or some similar condition may lead to a condition of general hypermnnesia. In periods of fever, memory may be so stimulated that the patient may recall innumerable details not ordinarily recalled and with a rapidity that is astonishing. Under great emotional stress individuals have reported that it seems that their whole life has passed in review before them like a flood. According to the evidence produced, the time occupied by these extensive memories has been so brief that the succession of events would have had to follow each other with lightning speed. On the other hand, the patient may very likely have an exaggerated notion of the amount of material he recalled.

The emotional stress that produces general hypermnnesia is very intense and involves the whole personality of the individual. Such has been the case when a person is expecting to die, in times of flood, famine, fire, or just before battle. Teachers may observe this when some great excitement prevails in the school. The children will seem impelled to relate in great detail irrelevant incidents with a resultant disruption of school discipline. Under such circumstances of emotional strain, the ordinary inhibitions that normally control the free flow of associations may relax. Thus the person has an unusual number of associations appearing in a very indiscriminate and fleeting manner. If we keep in mind that such exaggerated recall is a frequent accompaniment of great emotional excitement, we shall not be so intolerant when these effusions take place.

2. *Specific hypermnesia.* Cases of specific hypermnesia are rare, so rare, indeed, that we cannot be sure that the incidents cited are true in all details. We read that persons, under emotional stress or in illness, have been able to recite Latin, Greek, and Hebrew which they heard quite incidentally when children. The details of these accounts are so vague that one is inclined to doubt. No such cases have been reported with adequate control to verify them.

195. **Peculiarities of recall.** Forgetting may seem to be synonymous with the actual loss of retention, but recent work has proved beyond a doubt that this is not the case. A memory trace may be very well established and yet the person will be unable to recall. Forgetting has been very carefully studied in connection with mental pathology and the findings are of utmost significance. Recall involves not only that a memory trace shall have been formed but that the present circumstances be of a nature to bring it back to the foreground.

1. *Emotional interference.* A very potent factor in the modification of recall is emotional interference.

That recall is not in proportion to the strength of the memory relationship has long been recognized. Recall is a selective process. In recent years the psychoanalysts have adduced evidence to show that this selection goes on without conscious control, and that its basis is usually set forth as a hedonistic (pleasure-pain) one. In other words the painful things are inhibited so that they cannot, except under unusual circumstances, be recalled.

The inhibition or repression of painful memories is regarded by the psychoanalysts as a biological defense mechanism, whose function it is to guard us from painful experiences. That it is biological in origin may be subject to question, but that repression occurs seems to be generally recognized. This tendency to inhibit the unpleasant spreads to associations connected with the undesirable element so that trivial things of no affective importance in themselves are likely to be difficult to recall because their relationship to the inhibited element invests them with the same affective tone.

The process of emotional interference and repression will be found to explain the phenomenon of active forgetting

that we are about to study. Several recent studies have demonstrated that repression is a real process that affects our ability to recall material, especially when the term is defined in a less dramatic manner than the psychoanalysts have done. (Sears, 39; Rosenzweig, 37; Rosenzweig and Mason, 38; Sharp, 40; Wallen, 44; Koch, 26; Flanagan, 14) Repression will be considered in more detail at the end of this chapter.

2. *Forgetting in everyday life.* Under the leadership of Freud, the founder of psychoanalysis, there have been numerous reports of lapses of memory in everyday life. Some of these are rather bizarre and are sketchily reported. Others indicate pretty clearly that recall is certainly a changeable thing, that one may apparently forget a thing and then with as little reason recall it very distinctly. Studies of these instances have given rise to the theory that emotional inhibitions play a very large part in determining lapses of memory. Certainly the associations are not lost when they can be revived at a later time.

The following incident shows how a minor lapse may indicate an emotional inhibition. A woman who had been married a little over a year came to the hospital for treatment. She was apparently quite depressed and lost in her broodings. When asked her name in the course of filling out the hospital blanks she replied that her name was A——. The clerk wrote down the name A—— while the patient watched him. "Now what is your first name?" she was then asked. She replied, "It is—oh! My name is not A——, it is B——. A—— was my name before I was married." According to the theory advanced to explain such a lapse, there must have been some emotional situation that inhibited the giving of her married name in reply to the first question. Investigation showed that this woman was not happy in her married life, that she tended to go off into a dreamy state in which she imagined she was again an unmarried girl. Asked her name when in a period of such reverie, what more natural for her than to give the name fitting the period of her life in which she wished she now was?

Jones (23, pp. 44-45) makes some very pointed remarks in this connection:

In my own life I have noted numerous instances of purposeful forgetting of appointments, particularly with patients. If a given patient is tedious and uninteresting, I am apt to forget that I have to see him at a certain hour, and if a doctor telephones to ask me whether I can see an interesting case at that hour, I am as likely as not to tell him that I shall be free then. . . . Often when I am busy I conveniently forget, and once I left a patient without her daily visit for nearly a week. The self-reproach one feels on recollecting the forgotten duty on these and similar occasions is indicative of the true significance of the occurrence. This significance is intuitively realized in the case of lovers. A man who has failed to appear at a rendezvous will seek in vain to be forgiven on the plea that he had forgotten about it—will, indeed, with this plea only increase the lady's resentment. Even if he falls back on the customary psychological explanations, and describes how urgent business had filled his mind, he will only hear in reply: "How curious that such things didn't happen last year! It only means that you think less of me."

The reader has probably had the experience of being unable to recall a familiar name in spite of intense effort to do so, only to find that, at a later time, when he was making no effort to recall it, the name "popped" forth. In such instances, it is often found that the name is similar to the name of a person who is disliked, or that some other related and unpleasant emotion blocked the recall.

These incidents (and they are as numerous as human experience itself) show that what we recall is selected. This selection is not always conscious, the inhibitions and facilitations working without our being aware of them and our associations being guided from one item to another in a way that is completely beyond our control. When we retrace our associations, we can often see the cause of selection, and even when the cause is not apparent, it is advantageous to assume that the same principles operate. The way in which these inhibitions function will become clearer when we study extreme cases of forgetting and recall induced in experimental procedure.

3. *Experimental recall.* Under peculiar circumstances memories that the patient did not know existed have been experimentally recovered. The reader should not get the impression that there is anything particularly mysterious in the processes themselves. They all have a psychological explanation. No matter by what means the memory is recovered the significance of the recall lies in the fact that memories may be

buried, seemingly lost, but when brought to light are as clear and distinct as any recall could be.

(a) *Automatic writing.* The way in which this process operates is illustrated by an experiment described by Janet (22, pp. 99-100):

If we question the patient in a direct manner, if we ask her to pronounce or even to write voluntarily the name of the house physician who takes care of her, we discover that she appears to make an effort, but declares herself incapable of writing the name. We have to proceed in another way. We step away from her and ask someone else to talk to her; she replies to this person's questions, seems to pay attention to what is said to her, and does not mind us any longer. We slip a pencil into her right hand and she takes it without turning round . . . and, while she continues talking with someone else, we make her a suggestion as if she were able to understand us: "Write down," we say to her, "the name of the doctor of your ward." We see the hand that holds the pencil begin to move and write, "M. Lamy." In the same way we ask her what is the matter with her left hand, and she writes without hesitation, "I cut myself with some glass." In a word, she will answer in this way all possible questions, and, in her writing thus obtained, will show us the recovery of all the remembrances which she seemed to have completely lost.

These writings are concerned with trivial things which one might answer absent-mindedly. Prince (33, pp. 16-18 and 21-23) gives an illustration of a deeply buried memory that was brought to the surface in a similar manner:

A patient who suffers from an intense fear or phobia of cats, particularly *white* cats, can recall no experience in her life which could have given rise to it. Yet when automatic writing is resorted to, the hand writes a detailed account of a fright into which she was thrown, when she was only five or six years of age, by a white kitten which had a fit while she was playing with it . . . The hand wrote . . . "I think I know about the cats. I can remember myself, a little child, playing on the floor with a kitten, and it began to run about the room and had a fit, I think, and it jumped on me, and I was alone, and I screamed and cried and called my mother, but no one came, and I was very much frightened. I do not believe I ever told anyone. It was a white kitten. It ran out of the room and after a bit I went on playing." To test the extent of the conserved memories still further, the hand was asked to describe the furnishings of the room and the plan of the house. It wrote: "There were two windows on the side of the room. The shades were gray, I think, with a border of grapes, or something of that color. The carpet was green or gray, with green figures. There was a large old-fashioned sofa between one window and the door which led into the dining-room. A bookcase and desk-combination, you

know. There was a mantel, I think, between the windows. It was the ground floor."

This same patient had been vainly hunting for a bunch of keys which she had not seen or thought of for four months, having been in Europe. One day, soon after her return, while writing a letter to her son, she was interrupted by her hand automatically and spontaneously writing the desired information. The letter to her son began as follows: "October 30, 19—. Dear Boy: I cannot find those keys—have hunted everywhere... (Here the hand began to write the following, automatically.) "O, I know—you put those keys in the little box where X's watch is." In explanation, this patient sent Prince the following letter: "The keys were found in the box mentioned. I had hunted for them ever since coming home, October 4th. One key belonged to my box in the safety deposit vault and I had felt very troubled and anxious at not being able to find them. I have no recollection now of putting them where I found them."

(b) *Hypnosis and dissociation.* Hypnosis has been used in two ways to recover memories. One method is to have the subject in the hypnotic state live over experiences in his past life and recall specific details. When this is done, the individual, upon awakening from the hypnotic trance, usually does not remember that he recalled these events during the hypnosis and the events are still unremembered in his waking life. The second method is to suggest to the subject under hypnosis that when he wakes he will recall certain events. If this suggestion is effective, the result will be a recall that resembles ordinary recall in all particulars except that it was preceded by a suggestion.

The writer had a very instructive illustration of the former method. A woman of twenty years of age was subject to emotional depressions. During her periods of disturbance, she would become very much agitated and on one occasion attempted suicide. By the ordinary methods of free association we were unable to get any factor that had a bearing on her trouble. She would give numerous complex indicators, but when we attempted to follow these to their ultimate associations she could not be made to cooperate. She did yield to hypnosis. Hence, in a hypnotic sleep we suggested to her that she was a girl again, just beginning school, then going through later and later stages. In all these periods she lived over varying incidents, one after another. Finally, she came to a scene when she was about eleven over which she became very much disturbed. She was on her way home alone one

dark night when she was attacked by a burly man. She went through the whole scene of fighting off this ruffian, calling wildly for help; finally, she dropped down upon the floor in a stupor. When she recovered from this stupor, she awoke from the hypnosis and had absolutely no memory of having portrayed this scene. It took much painful endeavor to get her to recall this scene consciously even after we knew of its existence.

The second type of memory recovery through suggestion in hypnosis is illustrated by a boy of nineteen years of age. He was afflicted with a very bad case of chronic stammering. When he attempted to say certain words, his jaw would fly open and apparently lock. He would strain his whole body and go through the wildest contortions in his effort to say the word. Finally, he would sigh deeply and give it up as a bad job, usually being forced to use some synonym to express his thought. This boy's stammering began at eight years of age. At this time his mother had become insane and he had gone to live with his grandmother. The strange part was that, although he could narrate with the greatest detail events of his life from the time he began to stammer, he could recall not a single incident previous to that time. He was placed in a hypnotic sleep, and while in this condition he was told that upon arriving home he would begin to recall the events of his early childhood. He was then awakened and sent home. The next day he came back and told us that recollections of his early life had come back to him like a torrent. The truth of this was corroborated by a host of incidents he was able to tell us which fitted perfectly into his life story.

These cases seem to indicate that a person may have his memories blocked off into compartments, so to speak. Under certain circumstances, a group of experiences seem to have passed into oblivion. With changed conditions, such as an induced sleep, they come back. By means of suggestion the partition that seems to block off these memories may be broken down and the memories may return perfectly. Some writers have called this process of the breaking off of a portion of one's memories, *dissociation*. The term is descriptive of the result, but efforts to find a true neurological explanation for it have not been conclusive. That we can act as though there

were a dissociation can be easily demonstrated. Automatic writing appears to be just that. In the realm of the more familiar we have all observed people who could play the piano and carry on a conversation at the same time. Two sets of memories seemed to be operating at the same time without interference; i.e., they seem to be operating independently and hence dissociated. Certain processes seem to occur without our conscious attention to them. That an actual neurological dissociation takes place is open to question, however (Dorcus and Shaffer, 11)

Another hypnotic phenomenon may be used to demonstrate that a memory may be both blocked off and recovered experimentally. A person under hypnosis was given a glass of water and told that it was a glass of very hot milk. He was told first to blow it and then sip it very carefully. This he did, going through all the behavior of a person sipping a glass of hot liquid. When he awoke from the hypnosis, he had no memory of having done anything of the sort. When he was put back under hypnosis, we asked him what he had done in the previous hypnosis and he remembered very well having sipped the hot milk. We told him that when he awoke this time he would remember the incident. True to our suggestion he did recall it.

(c) *Crystal gazing*. A crystal has no mysterious power connected with it. Gazing into a crystal merely tends to help the individual to get away from external distractions and favors a condition of extreme relaxation. In such a condition associations can flow freely and it is this fact that makes crystal gazing a good means by which to recover repressed memories.

Morton Prince has used this method successfully with a patient whom he calls Miss X:

A glass ball such as is commonly used not being at hand, an ordinary electric-light bulb, disconnected from the wires, was substituted. When Miss X, who had not been hypnotized, looked into the bulb, she saw and described a scene which had no place in her memory and hence had no meaning to her. Under hypnosis, she repeated the description of the occurrence, with the addition of further details, including its time and place. Afterward, on carefully going over the events of that period, she recalled the event. It was a trivial incident of too little importance for voluntary recall. At another time, disturbed because she had absent-

mindedly torn up two ten-dollar bills and thrown the pieces away, she arose in her sleep, shortly after discovering her loss, and hid the remainder of her money under the table cloth. She also placed two books, a red and a green one, as she afterward found, over the place of its concealment. The next day, unable to find this money, she was greatly distressed, since it was all she had. She said nothing to Dr. Prince about her loss, but he meanwhile had learned of it while she was under the influence of hypnosis. Without disclosing his knowledge, he handed her the electric bulb—she was not hypnotized at the time—told her to look into it, think of her money, and she would learn what had become of it. "She looked into the globe and saw herself in bed in her room. She then saw herself get up, her eyes being closed, and walk up and down the room; then she saw herself going to the bureau drawer, taking out her money, going to the table, taking up the table cloth with the books, putting the money on the table, covering it with the cloth, and putting the red book and the green book on the top of it. . . . Miss X reported on her next visit that she had found the money where she had seen it in the globe."

From these experiments we can see that recall does not depend solely upon the integrity of the memory traces produced by the original experiences. When a person says, "I cannot remember," it may be that no memory exists, that he has suffered from a neural deterioration, or that the recall has been interfered with by some other factor such as an emotional block against recall.

196. Disorders of recognition. Since recognition memory differs from other forms of memory, its disorders are distinctive. These may take three forms: a feeling of familiarity in strange situations, a feeling of strangeness in a familiar situation, and disorientation.

1. *Feeling of familiarity in strange situations or déjà vu.* In a strange situation we may have the feeling, "This has happened before." Such feeling has been called *déjà vu* and involves more than just the feeling of familiarity without knowing why. In addition the person feels continuously discontented that he cannot seem to get this feeling of recognition out of his mind. (Pickford, 31) In many instances the feeling derives from the person's having had such a situation or place described vividly to him previously although he may never have experienced it or seen it. Sometimes the whole situation may not have been experienced but there may be elements in it that give the feeling of familiarity. In other cases the individual may actually have visited the place

under conditions that preclude accurate recall of other circumstances connected with the scene. An interesting illustration of the latter sort is given by Carpenter (8, p. 431):

Several years ago the Reverend S. Hansard, now rector of Bethnal Green, was doing clerical duty for a time at Hurstmonceaux, in Sussex; and while there one day went over with a party of friends to Pevensey Castle, which he didn't remember ever to have visited previously. As he approached the gateway, he became conscious of a very vivid impression of having seen it before; and he "seemed to himself to see" not only the gateway itself, but donkeys beneath the arch, and people on the top of it. His conviction that he *must* have visited the Castle on some former occasion,—although he had neither the slightest remembrance of such a visit, nor any knowledge of having ever been in the neighbourhood previously to his residence at Hurstmonceaux,—made him enquire from his mother if she could throw any light on the matter. She at once informed him that being in that part of the country when he was about *eighteen months* old, she had gone over with a large party, and had taken him in the pannier of a donkey; that the elders of the party, having brought lunch with them, had eaten it on the roof of the gateway, where they would have been seen from below, whilst he had been left on the ground with the attendants and donkeys.

Such verifiable experiences give evidence that very early experiences leave their impress and, although the details may not be so vivid as to lead to definite recall, they do leave enough of a modification to bring about recognition. It may be that the emotional charge surrounding the original circumstance is important in the later feeling of familiarity.

2. *Feeling of strangeness in a familiar situation.* A converse situation is one in which a person has a feeling of strangeness in a situation which he knows is a perfectly familiar one. This is not so common as the feeling of familiarity in a strange situation. When it does appear it is usually due to some change in the whole setting. We usually seek to discover what has caused the change. With this discovery the feeling of strangeness disappears.

This feeling of strangeness is sometimes closely related to certain types of obsession which we have already described. The subject has a persistent feeling that all is unreal and he may feel such insistent questions as, "Who am I? Am I real, or is all life a fiction? Everything seems so strange."

3. *Disorientation.* Associated with this feeling of strangeness, though probably resting on a different basis, is what is

called *disorientation*. Orientation depends upon a number of mental processes. For a person to be oriented he must have had adequate sensory impressions from his environment, he must have interpreted them properly, and he must have related them in orderly fashion with other perceptions both past and present. This implies an adequate memory of previous experiences as well as associational integrity so that memory traces may be coordinated without undue distortion. Disorientation has received a great deal of emphasis from the clinical standpoint not because this phenomenon is in itself so illuminating but because it is easily tested and points the way to further analysis. It may be due to a number of factors, such as apathy or delusional trends, as well as to memory losses. Orientation is usually divided into three categories: orientation for time, for places, and for persons.

(a) *Temporal disorientation*. One judges time by a perception of sequence of events and not by the time interval between events. One is likely to become at least partially disoriented with respect to time when the customary sequences are absent, and when there is a monotonous sequence of meaningless events. Such a situation obtains on an ocean voyage. A person has to keep an accurate check lest he forget what day of the week it is. A prolonged camping trip or any other similar change in conditions may produce a partial temporal disorientation. When the disorientation is pronounced, it may point to a more serious difficulty. If a patient tells you it is December 28, 1902, and always gives you the same date, it is pretty evident that his intake of criteria for temporal events stopped for him at that time. If he has not the faintest idea of what date it is, the season of the year, or any other temporal fact, he surely must be much deteriorated. Hence, the degree of temporal orientation will give you a clue as to the integrity of certain basic mechanisms.

(b) *Spatial disorientation*. Orientation in relation to a person's spatial environment means that he takes in and relates the visual, auditory, and tactual perceptions in their objective and social settings. In this connection, visual perceptions are more important than those of touch or hearing. Anything that will impair a person's intake or that will inter-

fere with his memory for such impressions will disturb orientation for place.

(c) *Disorientation for persons.* This may also be due to a memory defect and may range from a simple forgetting of some persons we have met to a complete forgetting of those we have known very well. For example, an individual with an advanced cerebral deterioration may not recognize his wife or his children with whom he has lived on good terms for years. A patient showing this advanced deterioration may remember his relatives but may not recognize those whose acquaintance is of a more superficial sort.

Disorientation, we must remember, is a crude symptom and is significant only in pointing to a defect whose meaning may be studied. So many factors are involved besides memory that no conclusions should be drawn until one has discovered why the disorientation has taken place.

197. **Retrospective falsification.** One of the difficult things that we must all accomplish is to distinguish between what is real and what is the product of imagination in the realm of memory. We may have a dream and upon awakening feel the effects of the dream with such vividness that we believe it is real. In such a case we have to "pinch ourselves to see whether we are awake." Similarly, when we wish a thing were of a certain description, we are very apt to falsify the details upon recall. This is proverbially so in "fish stories." Here the wish that the fish had been large and that it had fought for a long time before we landed it makes us involuntarily add details to the episode even though we are trying to recall the strict truth.

When for any reason our memory begins to fail us and events drop away, we are prone to fill in the gaps thus produced with fictitious events in order to make a consistent story. This process is known as *retrospective falsification*. It occurs in old persons whose memories are deteriorating with senility. It is very common in children who have not learned to analyze objective verities too critically. It is also likely to be prominent in those who are dissatisfied with reality and who tend to let their imaginations run riot. In some of these cases, it is almost impossible to distinguish a deliberate lie from an involuntary substitution of a phantasy. For example, a

woman, otherwise well-balanced and apparently normal, told her husband that when she was a child she and an uncle wrote poetry together. As a result, she stated, this uncle became very fond of her. He later became very wealthy and had recently died and left the major portion of his estate to her. She told her husband that she was to go to England to help administer and eventually to take control of this fortune. The gullible husband, elated at his wife's good fortune, resigned his position and made all preparations for the wonderful journey, when he was brought to earth with a jolt upon learning that the whole story was the sheerest fabrication. Investigation showed that from early childhood this girl had been accustomed to weave just such fairy tales and act them out as though they were the truth.

The apparent good faith of the narrator should not be taken as evidence of the truth of his statements. Our wishes color all our accounts, so that, in spite of our attempted adherence to the literal truth, we are prone to color our stories. The narrator should not be too severely blamed for these lapses from strict truth, but neither should the listener be too naïve in accepting everything he hears. Some historians would probably have been less willing to report, in good faith, stories told to them long after the instances occurred, or as they have been passed down from generation to generation, if they had understood the significance of this tendency to falsify upon retrospect.

One should be courteous enough to listen attentively when a comrade tells of his exploits of long ago, but it is well to remember that one is not listening to history, but rather to some facts embellished by the wishes of the narrator. All of us are tempted to distort facts somewhat in order to bring them into line with our wishes.

198. **Confabulation.** Somewhat related to retrospective falsification is *confabulation*. As a matter of fact some persons use the term *confabulation* to include the phenomena of retrospective falsification. Williams and Rupp (48) say, "... *confabulation* may be defined as the tendency of individuals of a particular personality pattern with incomplete memory loss, to substitute retained for forgotten experiences irrespective of time sequence." In other words the confabulator fills in the

gaps in his memory with what sounds like "tall tales" but is actually based on some experience in the life of the individual. For example, a man may spin a yarn about his having been at his dude ranch in Wyoming last week and all the exploits connected with it. The facts may be that he visited at a dude ranch many years ago as a tourist and had often longed to go to one as a paying guest or even to own one. Such a person may show few other symptoms than the confabulation, or it may appear in other contexts. If the memory improves, often the confabulation lessens or disappears.

XLIV. PATHOLOGICAL MEMORY LOSSES

Certain losses of memory are severe enough to be considered pathological. As we shall see, such losses as amnesias and fugues have deep roots in personality conflicts and frustrations. While they often appear to spring suddenly out of the nowhere, they actually have some basis in the mental life of the patient who adopts them.

199. Amnesias of impression and reproduction. Amnesia is a general term used by many to refer to any loss of memory. Often a further connotation of loss of a specific group of related memories or of a particular period of time is implied. One way of classifying amnesias is in terms of impression and reproduction, although the overlapping is likely to be great.

1. *Amnesia of impression and anterograde amnesia.* The term anterograde amnesia is closely related to amnesia of impression. It refers to a loss that extends to events immediately following an injury or emotional trauma. It is assumed that such "losses" were actually never received by the person, although this could not be proven. Actually amnesia of impression may not be a memory loss, in the strict sense of the term. Impressions that have never been received by an individual cannot very well be lost by him. Perhaps one reason they are called amnesias is because one might ordinarily expect that the person would have received the impressions; he was exposed to them adequately, and it may be sometime later that an outside observer learns that actually he never perceived them. There are various reasons for failure to retain impressions.

(a) *Inadequate perception.* Such factors as fatigue and the effect of drugs like alcohol may make one less susceptible than

normal to perceptual impressions. Also, when the individual is wrapped in some internal mental conflict, he fails to take in properly stimuli presented to him. (Sears, 39) Consequently, no definite impression is made and he exhibits a memory lack. In a mild form this occurs when attention is centered on something of profound interest for the moment. For example, a child may seemingly be rehearsing his multiplication table when his interest is on a football game he plans to attend. In such a case the mechanical recital makes very little impression and it may seem that the child has a memory lack. In more profound cases the person may be brooding to such an extent that he is totally oblivious to what is going on. Give such a person a memory test and he will fail miserably. Under other conditions, with proper attention and interest centered on the subject matter, the same individual will show normal ability to fixate the material presented. One should, consequently, avoid the conclusion that a person has a real memory deficiency when no check has been made upon the attitude of the person toward the material presented to him.

An injury, such as a fall resulting in a blow on the head, can cause inadequate perception for events that immediately follow it, apparently even though the person is conscious, as the following case reported by Cason (9) illustrates: While ice skating, a man tripped somehow on the ice and lay motionless for a moment or so, according to the report of a witness who observed accurately. When he got up, he said he felt dizzy but was all right. He continued to skate for a while, then took off his skates, got into his car, and drove toward home. He had driven for at least half a mile before he "came to." He could remember nothing that had happened after the fall, including the fall itself. While he could recount what happened later, he felt sure it was because he had been told, because he had no real memory for these events at all.

(b) *Mental deficiency.* A second cause of amnesia of impression is mental deficiency. Tests indicate that certain individuals are so lacking in ability to retain an impression that they seem to lack something requisite for retention in the neural apparatus. They seem to possess such a degree of fluidity that no lasting impression is made—no more than if

we move a stick through water. This condition is called *amentia* when it exists from birth.

A similar situation exists when there is an organic disease which has caused neural deterioration. This type, called *dementia*, can readily be distinguished from the previous type, *amentia*, by the fact that in the patient's previous history he was able to retain and that he has later lost this ability. Senile deterioration is an example of this type of loss. In profound cases these persons retain impressions from early childhood but cannot fixate recent events. For example, you may tell a senile woman that her husband is dead. She will respond to this information with an adequate emotional reaction but in a few minutes, however, she will have forgotten all about it. She does not even remember that you told her of her bereavement. This may be repeated over and over with the same results. We should get along much better with old people were we more tolerant of their failing memories. They are often inclined to misplace articles and then accuse others of stealing them. When we become irritated by such accusations, we merely demonstrate our lack of understanding.

2. *Amnesia of reproduction and retrograde amnesia.* These are the amnesias that we most frequently hear about. The patient cannot recall experiences that at one time had been adequately impressed upon him and that he could have been expected to recall. As the term *retrograde* implies, they are for a period preceding an injury or emotional shock. No amount of urging or trying on the part of the patient will cause him to remember. If the memory returns, it is likely to do so spontaneously, and it often does. We know then that the memory was not actually "lost." An extremely important factor in amnesia is that whatever has been lost and cannot be remembered under the usual stimulation is always related to emotional reactions. Pertinent emotional tendencies are guilt, shame, sorrow, disgust, and feelings of inferiority. (Sears, 39) Since the reason for the amnesia is in the life of the patient, the external conditions that give rise to it are inadequate to explain its occurrence.

Janet's (22) case of Irene illustrated amnesia of reproduc-

tion and points out vividly the importance of affective factors in its production:

Irene was a girl of twenty years, who was greatly disturbed by the long illness and death of her mother. Her mother had reached the last stage of tuberculosis, and lived alone in abject poverty with her daughter, in an attic. The girl watched her mother during sixty days and nights, working at her sewing machine to earn a few pennies to sustain their lives. When finally her mother did die, Irene became very much disturbed emotionally. She tried to revive the corpse, to call the breath back again. In her attempts at placing the limbs in an upright position, the mother's body fell to the floor, whereupon she went through the strain of lifting her back into bed, alone. Certainly, such experiences could not be forgotten in the ordinary course of things. Yet in a little while Irene seemed to have grown forgetful of her mother's death. She would say, "I know very well my mother must be dead, since I have been told so several times, since I see her no more, and since I am in mourning; but I really feel astonished at it all. When did she die? What did she die from? Was I not by her to take care of her? There is something I do not understand. Why, loving her as I did, do I not feel more sorrow for her death? I can't grieve; I feel as if her absence was nothing to me, as if she were travelling, and would soon come back." The same thing happened if you put to her questions about any of the events that happened during those two months before her mother's death. If you asked her about the illness, the mishaps, the nightly staying up, anxieties about money, the quarrels with her drunken father,—all these things seemed to have quite vanished from her mind.

What had happened to her? Had something happened to her nervous system to wipe away all traces of the horrible events she had experienced? Was she simply pretending she did not remember? Or, did she remember without being able to recall, due to some powerful inhibitions?

Some light is thrown on this question by a study of the crises (or fits) which she began to experience some time after her mother's death. These would last for hours at a time, and during them she would lose contact with her immediate surroundings and perform scenes with the skill of an actress. She would re-enact all the events that took place at her mother's death, as well as other unpleasant episodes in her life, all with the greatest detail. She would carry out with words and acts the different events, and when death finally came to her mother would prepare for her own suicide. She would discuss it aloud, seem to speak to her mother, and to receive advice from her. She fancied that she would try to be run over by a locomotive. She acted as though she were on the way, and stretched herself out on the floor of the room, waiting with dread and impatience for death to come. She posed in true dramatic style waiting for the train to come. Finally, when it came she would utter a terrible shriek, and fall back motionless, as if she were dead. Then she would get up and begin acting over again one of the previous scenes. After a time the agitation seemed to die down and she came back to normal consciousness, took up her ordinary

business, seemingly quite undisturbed about what had happened and with the concomitant loss of memory for the events she had so faithfully dramatized.

This case illustrated the affective blocking from recall of unpleasant incidents. Irene's experiences had been so horrible and her grief so great upon the death of her mother that suicide seemed her only solution. Victory against the suicide could come only by blocking from consideration the things she could not endure. Hence she formed an inhibitory block which successfully prevented the recall of her unpleasant experiences. If they did break through, they did so at the expense of her waking consciousness and she went into the crisis described. This seems reasonable proof that the forgetting was functional. It further indicates that a functional loss may, and usually does, involve memories that are extremely vivid. Not lack of interest, but an excess of extremely painful interest caused Irene to build up inhibitions against the recall of her mother's death. Notice that the loss of memory was not only for the event of her mother's death but for all the things that were related to the unpleasant incidents connected therewith. Any subsidiary event that became invested with the same emotion was likewise inhibited from recall.

200. **Systematized and localized amnesias.** We have seen that in functional amnesias certain memories are blocked from recall by an affective inhibition. The groupings of these amnesias may take two forms: systematized and localized. The systematized amnesias are those in which the forgotten ideas are related to a certain subject regardless of the period of time when they were experienced. The localized amnesias are those in which a certain period of time in the patient's life is lost.

1. *Systematized amnesias.* When discussing associations we found that certain groups were held together by an affective bond which we called a complex. In systematized amnesias these constellations are probably basic in determining the grouping of memories that are lost. They form a certain definite system and the whole system either disappears or is recovered *as a whole*.

These systematized amnesias may involve almost any group of associations. Patients will forget words relating to

certain subjects of a highly emotional nature; definite motor habits will be lost, such as how to sew or how to make a bed. Some forget how to stand or walk while suffering no loss of ability to use the legs in other ways. This symptom has been given the name *astasia-abasia*, which means inability to stand or walk. When these patients are analyzed, it is invariably found that the group of functions lost or the situations forgotten center around some emotionally toned situation which the person has experienced. (Rapaport, 34)

2. *Localized amnesias*. In localized amnesias the loss, as we have said, is for a particular period of time. These are the most commonly reported amnesias and we shall give examples under other headings.

The mechanism back of this form of localized amnesia is somewhat the same as in the systematized form, the difference being that in the localized form the troublesome scene cannot be blocked off without taking quite a large portion of the personality with it. When the distressing event is too closely knit with the concomitant circumstances, the only way to forget it is to bar everything that happened in the same chronological period in which the entire group of events were experienced. If this tendency of memories to group themselves is kept in mind, the study of minor forms of memory loss will be greatly simplified.

201. **Loss of personal identity and fugue.** One of the most characteristic features which appears in amnesias is loss of personal identity. (Abeles and Schilder, 1) The patient does not know who he is, what he does to earn a living, who his relatives are, or where he lives. He may suddenly realize that he does not know who he is and be quite perplexed by the fact. One such patient stepped off a rather high curb which he had not noticed as he was walking along, preoccupied. He stepped with quite a jolt and suddenly wondered what he was doing there and just what his name was. He could remember none of the events leading up to his being on this street and was at utter loss to know what to do next. He presented himself to a policeman (as such patients frequently do) who took him to the hospital. He took about twenty-four hours to recall his identity, and this he did only after certain memories had been recalled under hypnosis. The

facts leading up to his amnesia may be instructive. He had participated in a dance band in order to earn some money. His parents had objected seriously to such participation on moral grounds and because they felt that he was undermining his health. Their objections had become particularly strong when the band secured an engagement in what they considered an undesirable roadhouse. The matter was further complicated by the fact that the young man had become enamored of the young lady who was vocalist with the band and was carrying on a clandestine affair with her. He wished to confide his home troubles to her, but she was not interested. With his rather strict moral background and feelings that he ought to be grateful to his parents and respect their wishes he was placed in a severe conflict situation. As he had been walking down the street, mulling over what to do, he received the jolt of stepping off the high curb unexpectedly and "solved" his dilemma by losing all identity. According to Abeles and Schilder (1) by far the majority of amnesias who came to their attention had some sort of family difficulty or a real economic problem. In this case both appeared. The amnesia provided a method for running away. Depression over family problems, marital difficulties (Kanzer, 24), and economic reverses (or the expectation of them), such as unemployment, debts, and the like, figure prominently in the lives of those who adopt the rather flimsy attempt at adjustment through amnesia. In most instances an investigation reveals that the personality of the patient was weak in integration and he had difficulty in meeting the real problems of real life.

A fugue is a sort of amnesia in which the patient not only loses his personal identity but is not aware that he has done so. All the events in his life which would remind him of who he is or what he should be doing are gone, but he is not perplexed by it, not realizing he was ever anyone else. Characteristically, he buys a railroad or bus ticket to another city and takes up life anew in a new job and under a new name. He maintains contact with his new surroundings, not losing automatic habits of how to act in public, how to carry on business relations, etc. A fugue is very similar to a somnambulism being carried on in the waking instead of the sleeping state. Both will be discussed in this connection when we consider hysteria,

and an example will be given. Fugue patients sometimes regain their identities and memories suddenly, and sometimes go through a period of realizing there is something wrong and something they would like to be able to remember but cannot. (Rapaport, 34) Frequently, also, there is an amnesia for the period of the fugue after the person regains his original identity. As in other forms of loss of memory, there is a very strong emotional complex leading to a blocking or inhibition of certain experiences in one's life.

XLV. EXPLANATION OF MEMORY DISORDERS

In the presence of all this intricate jumble of peculiarities of memory, how can we arrive at any psychological explanation? We may state at the outset that no simple explanation can be evolved to explain all forms and degrees. To attempt any such unifying principle would be absurd. In a number of types of memory disorder, the description of the peculiarity suggests its own explanation. In some the disorder appears so strange that we are left bewildered at the phenomenon. What we wish to do in this section is to present some aspects of various explanations which will give us a good working hypothesis of the processes involved.

202. Organic and functional causes. The organic causes of memory defects are rather numerous. There is little doubt that hereditary factors play some part in memory defects. The degree of retentivity, that is, the capacity for retaining the effects of any modification, varies with individuals. Various accidents may occur which interfere with the memory processes, or disease may change our capacity to remember, as well as destroy past memories. A child may have a birth injury; he may suffer from some disease which destroys part of his nerve substance. Such diseases as syphilis, meningitis, infantile paralysis, sleeping sickness, or tuberculosis (when the tubercle bacillus invades the brain substance) may have a disturbing effect. Again, malnutrition, either of the foetus during gestation, or in early infancy, may have a permanent degenerative effect on the nerve tissue. These are problems of medicine and not of psychology, although the effects appear in any psychological study of the memories of the persons involved.

Again, there may be precipitating factors for memory disorders, such as amnesias, in the form of blows on the head,

falls, and other serious body disturbances. In many instances of this kind no permanent organic damage is done as is evidenced by the subsequent return of the "lost" memories. In patients where there is serious conflict and the need to run away, the physical injury and its accompanying loss or semi-loss of consciousness may act as a sort of excuse, as is known to happen in many forms of hysteria. Rapaport (34) adds the interesting hypothesis that the amnesia is a psychological reaction to the brain injury where one has occurred; in this instance, too, the affective life of the patient would be prominent in causing the amnesia.

If organic causes were the only ones operative, the discussions in this chapter would have been much briefer and would have appeared much simpler. But because we have mental disturbances for which there is no organic background, our interest is challenged. The question that we have to answer may be stated somewhat as follows: Granted that through experience modification has been effected in the neural organization of the individual, why is it that in certain circumstances this modification fails to manifest itself, when in other circumstances it can be proved to exist? Why, when given apparently equal opportunity to remember two events, do we remember one and forget the other? Let us review some of the possible explanations for these questions.

1. *The mental trauma theory.* According to the trauma theory, a memory is forgotten because it has, through some mental shock, become invested with a highly unpleasant affect. A number of the illustrations that we have given show this factor, which is the phenomenon we have called active forgetting. The girl who could not recall why she was afraid of cats had experienced a shock in playing with a cat when she was a small child. The fear of white cats remained, but the incident upon which this factor was based was forgotten. No doubt this explanation does fit a number of cases of pathological forgetting, but there are other cases in which no definite mental trauma has been present.

In the experimental production of amnesia by hypnosis, on the other hand, the traumatic theory cannot be operative. After awaking from the hypnosis the man forgot that he had sipped a glass of cold water, thinking it was milk, but

there was no mental shock of any kind connected with this forgetting. In many other cases of forgetting no trauma can be found, and in some it can be shown that none has existed in connection with the forgotten events.

Consequently, we may accept the mental trauma theory as a factor in some cases but we should not attempt to apply it to every case of functional forgetting.

2. *The lack of interest theory.* Another explanation for forgetting is that we fail to recall because we lack interest in the forgotten experience. The reasons why this interest is lacking are variously stated. In some cases it is because the things learned never had any direct relation to the important interests of the subject. This type may be illustrated by such prosaic things as language paradigms, mathematical formulae, or what we had for lunch a week ago last Thursday. Another statement of this theory is to the effect that the forgotten thing may once have had interest but because of later incidents and more recent experiences the interest in the forgotten item has waned. In other words, later interests submerge more remote ones to the extent that they are irrecoverable.

This explanation no doubt holds for some memories, but we have given a number of illustrations where the forgotten things had the profoundest interest for the individual. Simple cases of forgetting may be explained by a lack of interest, but surely in the remarkable types that greet us in the field of pathology this is an insufficient explanation. Even in the loss of simple events there is accumulating evidence that the interest theory has been overworked.

203. **Dissociation.** Two of the early workers in the field of abnormal psychology were Pierre Janet and Morton Prince. They were both imaginative and productive thinkers and always on the alert for new and better explanations for well-known and little-understood mental phenomena. To explain some of the abnormalities of memory, they and their followers used a term called *dissociation*. Each had a little different explanation, but the essence was that certain segments of memory can be split off, so to speak, from our conscious recall so that they are dissociated and not conscious. They are still present but not activated by the stimuli which

we would normally expect to arouse them. For example, in an amnesia certain memories in our past life have become dissociated so that the normal stimuli for our remembering them just don't produce any recall at all. A person may see the image of his face and not be able to recall his name or visit the scene of some important experience in his life and have no recollection of it at all even though it may have occurred only recently. That these memories had not been wiped out completely can be shown by their reappearance at a later time. Both Janet and Prince postulated a neurological basis for the dissociation process; they assumed that certain nerve pathways or traces were actually dissociated. In certain cases of hypnotic dissociation Dorcus and Shaffer (11) have been able to show that no physiological process occurs. In describing dramatically what seems to happen in many abnormalities of memory (and in many other functional disturbances, for that matter), dissociation serves a useful purpose, but as an explanation for them it is still not adequately explained as a process itself. We should then consider it descriptive, not explanatory.

204. Repression. In working clinically with psychoneurotic patients, Freud and the psychoanalysts were impressed with the fact that most, if not all, of their patients seemed to keep forcibly out of their conscious thinking certain impulses or "instincts" which had become painful to them if they gratified them or thought about them consciously. This process Freud called *repression*. He couched his formulation of its action in rather dramatic terms, speaking of a censor as the repressing agent and about libidinal strivings as the material being repressed. The theoretical dogma about repression has been vigorously criticized by many psychologists, but the fact that some such process as repression occurs is agreed to by most.

In the 1936 edition of this textbook the senior author pointed out certain of the difficulties with the repression theory as an explanation of memory abnormalities, although he made clear that its descriptive usefulness was great. He proposed that the process of repression was the mental counterpart of the process of inhibition in the motor realm. This is what he said: "All sorts of mental processes are proceeding

simultaneously. Some of them are harmonious and cooperate in the final reaction. Some of them are naturally antagonistic; they simply cannot function together. In these latter instances we have either a balance and resulting compromise; or one factor is favored to such an extent that the other is inhibited."

Thus what we do when we repress is to keep certain memories from becoming verbal or conscious by substituting others. We force ourselves to forget. Freud implied that what is repressed is unpleasant. Many unpleasant things and events can be remembered, however. Many experiments on the recall of unpleasant experiences, words, etc., indicate that the unpleasant may or may not be forgotten more easily than the pleasant. Rosenzweig and Mason (38) performed an experiment which helped to clarify what sorts of unpleasant experiences are repressed. They gave a series of simple jigsaw puzzles to young children to solve. Each child saw a picture of the completed puzzle before he started to solve it. He was permitted to finish solving half the puzzles, but he was interrupted before he finished the other half. Later the children were asked to recall as many of the puzzles as they could. Those children who were rated low in pride remembered more of the uncompleted puzzles, but those who were rated high in pride remembered more of those they had completed. For the low-pride group not solving puzzles would not be so painful as it would be for the high-pride group; and, as would be expected, the latter repressed the memories of the unfinished puzzles, the ones which would be a blow to their pride. Later Rosenzweig (37) presented jigsaw puzzles to Harvard students whom he divided into two groups. One group were told that the experiment was designed to test the puzzles, and the other group were told that it was a mental-ability test. Again they were allowed to complete only part of the puzzles. The group which thought the puzzles were a mental-ability test forgot more of the uncompleted puzzles than the other group did. For them something was at stake, their pride was involved, and remembering the unfinished puzzles would involve shame, guilt, and lowering of their self-esteem. Rosenzweig (37) would summarize this by saying their action of repression was "ego-defensive."

Other experimenters have shown the same tendency to repress material or experiences which are related to a lowering of our self-esteem. (Koch, 26; Sharp, 41; Flanagan, 14; Sears, 39)

Sears (39) has gone to some trouble to show that certain instances of repression can be put into more conventional stimulus-response terminology but that many more instances need to be studied before accepting the concept of repression as all-explanatory in abnormalities of memory.

Repression, then, is the blocking of a tendency toward making verbal or conscious some activity or experience that we might normally expect would become conscious. The blocking is probably accomplished by the inhibition.

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CHAPTER IX

DELUSIONS

XLVI. BACKGROUND FOR DEVELOPMENT OF DELUSIONS

Errors in judgment are universal, but such errors do not account for the persistence with which certain false beliefs are maintained by those over whom they gain control. We shall learn that the explanation of delusions is not found in the rational processes of the deluded person. The cause lies in some emotional factor, and the rational processes are used by the individual as a screen to cover the true nature of his trouble. Rationalization and projection play very prominent roles in the development of delusions.

205. An example of delusions.

An unmarried woman of fifty-two, while working in a certain establishment, met casually a man who paid little attention to her. Some time after their meeting she was convinced that the man was following her. She says that one evening as she was standing on the street she saw this man going by with the chief of police and heard him ask the chief whether he might follow her. Since that time, she declares, he has done everything in his power to ruin her reputation, following her from town to town and annoying her in every way. As soon as this man arrives on the scene she notices a "change in the atmosphere"—people have no more to do with her. This idea has taken such root in her mind that she will talk about nothing but this pursuit. Working in league with the man, she says, is a woman for whom she (the patient) worked at one time. The pursuers travel in automobiles, changing from one make to another in order to fool the patient. The reason given by the patient for this pursuit is that the woman pursuer is in love with the man and is afraid that the man is also interested in the patient; so she makes him follow the patient and torment her. She follows the trail to witness the torture and so assure herself that the man cares only for her and not for the patient. Here is a queer distortion of rational processes. It started from the patient's hidden desire that the man should follow her. This desire she dared not admit to herself, so she expressed it as a fear that she was being followed by him. This fear she changed to an actual affirmation. Her wish to be pursued by the man is gratified by the idea that the entire time of these two people is taken up in a vain chase after her. (Morgan, 19, pp. 182-83)¹

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206. Definition of delusions. A delusion is a false belief. It must be differentiated from an hallucination although delusions may frequently accompany hallucinations. An hallucination, you will remember, is a sensory impression for which there is no appropriate stimulus. The patient with a delusion does not claim to be able to see or hear someone who isn't there. He places implicit confidence in beliefs that to others appear obviously incorrect. It is difficult to draw the line between a simple error in judgment and a delusion. This is partly because we do not know what is fact and what is not in many instances. It is not quite so hard to tell the difference, however, between those who have made an honest mistake in judgment or reasoning, and those who seem to cling to an error in reasoning with great emotional fervor and refuse to consider any other viewpoint. This is likely to be characteristic of the person with a delusion, even though his delusion may not be at all consistent.

207. The "delusion" that man is a rational being. Two factors are involved in belief: the experiences that the person has had which provide the basis for judgment, and the emotional relief that comes with the acceptance of the judgment. An error in belief can consequently be based on (1) an error in judgment or (2) an error in emotional bias.

A judgment is a mental process which corresponds to an actual trial of a situation in the motor realm. Like a motor problem, a mental problem sets up a tension. When a person makes a successful mental solution (a judgment), he is also likely to experience relief from tension. This relief is ordinarily pleasant; the affective experience is pleasing. Normally, if the judgment is in error, successive experiences will prove it, and the strain will again be present—the problem has not actually been solved. Now unpleasant tension accompanies the judgment instead of the pleasant relief from tension. The normal person will try again, form a new judgment until the relief from tension and the accompanying favorable emotional bias remain. If this affective bias continues, it may outweigh other factors so that even when the situation is changed and the judgment is made incorrect, it may be favored because of the emotional bias. The error is based on affective factors, rather than rational, logical ones.

As was mentioned in the chapter on association processes, certain systems of ideas become associated into a complex with some emotional bond holding them together. The emotion connected with the experience serves to bias the reaction of the person where matters associated with the complex are concerned. His associations are determined much more by their affective relation to the complex than by their logical relationships. It is much the same way with a delusion. The belief is based on an emotional factor rather than on the logic of the situation or on the factual nature of the belief.

Certainly, if a person can persist in believing a thing that evidently is not true to facts, that experience or reason cannot correct, and that is out of harmony with the rest of his life and thinking, he adheres to this belief because of an emotional bias. Quite probably there is an emotional bias back of every belief, but when the affect takes complete control there is the possibility, even the probability, of a pathological delusion.

Belief may come as a welcome relief from mental turmoil. To withhold judgment means that one must remain in a condition of strain, prepared for the different possibilities that may result. Such tension, to some persons, is highly distasteful. They long for the time or circumstance when they can be relieved from uncertainty. Belief comes as such a relief. Having accepted a solution, some persons resist its change or modification because this would involve another struggle. Life is filled with devices to avoid mental struggle: we search for advice, tips, hunches, anything that will relieve us from the strain of deciding for ourselves, and when finally we make up our minds, we often do it with a vengeance. We try to convince ourselves that we have made the best choice and will not be moved from it.

208. Feelings of inferiority. Inferiority feelings supply a rich background for the development of delusions. The person may or may not actually be inferior. If his own evaluation of himself is low, if his security has been threatened, he may react at first by trying to overcome the difficulty. He may find some area in which he can compensate for his real or fancied inferiority. This method of dealing with a conflict has been mentioned in Chapter II. On the other hand, if he can explain his inferiorities away by offering an apparently good excuse

for them, or by blaming others for his failures, or by even denying them completely, he is relieved from painful feelings of defeat. He may be aware that these explanations are distortions of fact when he first begins to use them, but soon he is led to deceive himself and to try to deceive his friends. Instead of making a mistake only in his evaluation of his own personality, he is now making a mistake in the evaluation of his environment. (Maslow and Mittelmann, 17) ¹

It is obvious that in such instances the appreciation and evaluation of the hardest facts of reality are altered. The patient's experiences, of course, are conscious, but not entirely so; he has no insight, and sees no connections with his inner life. He takes his experiences at their face value. In other words, instead of blotting out his inner life, he alters reality. It is absolutely impossible to show him that the trouble is not with the world but with him. He is not aware of the reasons for his outlook, and his own impulses toward the world are entirely unknown to him. What we wish to show here is that the expectation or the experience of overwhelming threats from the world may be entirely open and almost catastrophic in intensity. (Maslow and Mittelmann, 17, p. 138)

Most of us, on occasion, have had impressed upon us a recognition of our incompetence in comparison with the accomplishments of others. We can remember the emotions that surged through us when, after a brilliant recitation by one of our classmates, we made a miserable failure. We felt humiliated whether our classmates snickered or showed sympathy. If we have professional ambitions, how small we feel when we see the performance of an expert in our chosen field!

Our cringing moments, painful though they are, are likely to be fleeting. But if we can imagine these feelings persisting and pervading our every thought or act, we shall get some estimate of the misery suffered by one who is chronically the victim of an inferiority feeling. Such a person will go to any lengths to rid himself of his misery. In a broad sense, compensation covers the violent reactions an individual makes in defending himself against these feelings of inadequacy.

Adler (1) argues that feelings of inadequacy are produced by an inferiority in some organ of the body. He cites many examples to show that in marked cases of compensation there

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is this factor of organ inferiority and, on the basis of these illustrations, draws the conclusion that it is always present. He makes the reaction a biological one, contending that the psychic life makes up for the deficiency in the physical organism.

We believe that a true organic inferiority, such as his theory demands, while it may surely lead to feelings of inferiority, is not essential. The notion of inferiority can be developed only by comparison. If a person is not comely he does not learn this fact by studying himself in the mirror, but by comparison with other individuals. A man learns he is a weakling only when he sees the vitality of another more fortunate person. Hence, the feeling of inferiority is the result of experience, the result of a comparison of one's traits with those of another. For this reason, one need not possess an actual inferiority in order to have a feeling of inadequacy. A boy with an intelligence quotient of 110 may feel inferior if he is thrown only with boys with intelligence quotients of 150 and above.

The following case illustrates this mechanism. A boy was brought for examination to the author's clinic by his mother, who stated that he was mentally deficient. She was afraid that in some mysterious manner she was to blame for this and wanted us to suggest the best course to pursue in his education and in giving him vocational direction. This boy certainly felt that he was intellectually deficient. He prefaced all his responses to test questions with some such remark as, "I am not very good in that." Asked his grade in school he replied, "I am in the fifth but I should be in the sixth. I am not very good in school work." The test gave him an intelligence quotient of 105. He was not intellectually deficient, but he felt definitely that he was, and his mother was sure that he was. We discovered that this child had a sister several years his senior who was unusually bright and who spared no pains to impress this fact upon her younger brother, with the inevitable result that he felt woefully inferior. This is not a rare case. It merely illustrates what is happening on all sides. We judge ourselves not by our absolute or true values but by comparison with others.

Most of us are very poor judges, either of ourselves or of

others. This paves the way for many unjustified feelings of inadequacy and likewise leads us as a means of compensation to overvalue some quality in ourselves which a saner view would tell us does not warrant conceit.

Furthermore, our opinion of the relative value of our traits follows no fixed order. One person may consider his mental qualities as the most important, another his emotional stability, another his physical prowess, another his pulchritude, or another his size. Society and education tend to fix certain relative values, but they are not always successful in this. We cannot assume that if a person is dull he must feel inferior on this account. By no means do all dull individuals feel inferior because of their intellectual deficiency. We may feel sorry for a person who lacks a quality that we value highly, but many times he does not need our sympathy, for he may not be troubled by his deficiency.

209. Attempts to overcome the feelings of inferiority.

Keenly sensing his inadequacy, an individual may fight to overcome it or may adopt a scheme to hide it from himself and others. Adler contends that the urge toward such an adjustment is a fictitious goal of superiority that the individual sets up. He calls this goal the "masculine protest," by which he means that the goal of each individual is to be a "man." This is another unwarranted assumption. One does not need to formulate a goal in order to fight against an undesirable situation. Why should we assume that the cat which fights the dog has formulated a fictitious goal of superiority over the canine species before she can fight? She fights because she is angry and afraid, she fights to escape from the undesirable situation, and the outcome is always problematical. We fight our inferiorities because we do not enjoy the odious comparisons that arise as long as the inferiority is present. We crave release from the undesirable tension that the inferiority causes in us. From the outsider's point of view there may be a goal, but the fighter does not need to image it.

Almost all individuals who have a definite feeling of inferiority attempt various means of defense, not all of which have the same result. Some individuals adjust by regressing. They ignore the facts and so obtain release from the unpleas-

ant situation. The fighter adjusts by resisting the situation which to him seems to produce the feeling. If he is successful, he has solved his problem. Hence, it is natural that in many cases the solution should take the form of *compensation*. If one is weak physically, to develop physical prowess may be a solution, a form of direct compensation. A girl who had a fear that she was developing tuberculosis escaped her feeling of inferiority by developing the greatest chest expansion in her class. The only reason she went to this extreme was that, in order to obtain satisfaction, she needed very convincing evidence that she was not ill. It is incorrect to assume that the victim of a feeling of inferiority reasons that he must excel and then sets about to do it. He is impelled to fight as long as the feeling remains and it usually remains until excellence is achieved; consequently, he cannot rest at any half victory.

The ordinary individual tries various methods of adjustment. The one he tends to adopt, whether compensation or any other form, is the one which happens to bring him satisfaction. If the first solution tried is not satisfactory, some other solution is tried, and so on, until a satisfactory, or at least a tolerable, situation is reached. Much of the ceaseless striving of humanity is, in essence, a concrete portrayal of this psychological mechanism.

In the early stages of development, the delusion may operate merely as a distraction device, inviting others to an examination of the validity of the statements made, and successfully concealing the actual trouble. The patient is saved the pain of acknowledging, of discussing his weakness and, instead, becomes involved in a study of exactly how much pain he has, how great he is, how much he is being persecuted by his enemies, what should be done to apprehend and to punish these enemies, and other irrelevant subjects. Such a process becomes so gratifying to him that it is likely to be continued, elaborated, and fostered with such zeal that it becomes an integral part of himself.

His friends become thoroughly deceived by such tactics on his part and try to correct his stories by showing him their falsity, whereas they should endeavor to discover the

source of his inferiority and replace it by self-confidence. If this can be accomplished, the patient will have no further need for his delusions.

210. **Projection.** More important for the development of delusions than compensation is a mechanism called *projection*, which we have referred to in an earlier chapter. We hinted at it in Article 208, when we spoke of reacting to one's feelings of inferiority by blaming others and making errors in the evaluation of one's environment. A very common form of projection in which we all indulge is blaming the incidental cause for our own inadequacies. The golfer looks at his club in disgust when he misses a shot, and the child kicks the stool over which he stumbles. One's own awkwardness is projected into the golf club or the stool.

Sears (21) defines projection in the following terms: "A wish, attitude, or habit-hierarchy which is not compatible with other attitudes or habits of an individual may be *attributed* by that individual to other persons rather than to himself providing he lacks insight into the fact that he himself possesses the trait in question." Now in the instances we just mentioned the golfer and the child might admit that their mistakes were their own fault, if pressed hard enough. Most people who use projection seriously to hide their inadequacies do not have this insight. They seem to change from saying, "I am inferior and possess characteristics that account for my shortcomings," to saying, "I am superior and do not possess these undesirable characteristics, but *they* possess them and are responsible for my difficulties." What better way to keep the painful effects of a conflict from being quite so painful?

Psychoanalysts have made good use of the term projection and have said in effect that it is a process whereby the personality (ego, in psychoanalytic terms) more or less pushes onto the external world traits that the person possesses but of which he is unconscious. They remain on the unconscious plane because they would be painful to the Ego if they were consciously admitted. Sears (21) performed an interesting experiment in an effort to clarify whether people who did possess certain undesirable traits actually attributed them to others more than did those who did not possess them, and whether they were unconscious of the fact or, as Sears put it,

lacked insight into what they were doing. He first determined how undesirable a number of fraternity men considered certain traits: obstinacy, stinginess, disorderliness. They considered them quite undesirable as compared with others. Then he had each student rate his fellow fraternity men on each of these traits. Each man also rated himself. After he determined that these ratings were carefully and accurately done, Sears could compare the consensus of the ratings for each man with his own evaluation of himself. Next he could see whether those men whose friends said they possessed the undesirable traits, failed to realize that they did, and finally whether they attributed their own deficiencies to others more often than unprejudiced observers did. He found just that. Those who lacked insight into the possession of a trait did attribute it in larger measure to others than those who did not possess the trait or who did possess it but admitted it (these latter thus showed they had insight). Projection seemed limited, furthermore, to those who lacked the insight. (Psychoanalysts might say this lack of insight was repression or at least due to it.) The importance of the affective component was revealed by the fact that the men who lacked insight considered these undesirable traits as more reprehensible than did those who possessed some insight.

Here we see projection operating in a group of people who would certainly fit within the normal range as we have considered normality. They show no real, well-developed delusions. They have merely made some errors of judgment. But it would not be too hard to see that the man who firmly believes that there is a real conspiracy of unscrupulous, greedy persons out to get his money away from him may be projecting his own strong but unadmitted temptation to get some easy money. Another frequently given example is of the spinster who develops a delusion that a certain fictitious gentleman is doing his best to gain entrance to her home so that he may court her and even marry her. She may even dream up the notion that he is following her with the intention of abducting her. It is not so difficult to see that she may be projecting her own desires, which, being a respectable and proper lady, she dare not admit to herself, onto the man of her delusion. She now believes in the reality of what is

obviously erroneous and attempts to show by a consistent set of reasons that she is correct, all because to do so protects her from the admission of highly objectionable desires, desires which might make her feel inferior and even worthless.

211. **Rationalization.** But, even if he knew what he were doing, a person could not boldly tell his fellows that he believes because it pleases him to do so or because his belief serves a useful defensive purpose. Such a confession would bring forth derision and cause humiliation. The individual must defend his position. He must give a reason for the belief that is in him. Such justification has been called *rationalization*. Rationalization consists in giving an acceptable reason in place of the real reason for conduct or for one's attitudes. It is quite normal in many instances and may even serve to help a person to live more amicably with himself. In most of these instances, however, the person is aware that he is rationalizing, if he is really pressed to an admission. The high-school or college girl who says she smokes cigarettes because they "soothe her nerves" usually knows that her real reason is to increase her social prestige; and the student who says that he spends most of his time in social and athletic activities because he is afraid he will not have a well-rounded personality otherwise usually knows down deep inside that in this instance he is not really primarily concerned with a well-rounded personality. He simply prefers the extra-curricular to the curricular, but it sounds better to give a more lofty explanation. But rationalization can be such an important factor in the development of abnormalities of belief that it deserves some detailed considerations.

Most of us have been taught to hold reason in high regard and to disparage affective motivation. From early childhood we are taught that to say we have done a thing because we wanted to do so is inadequate. A child comes to school tardy. The teacher demands an excuse. If the child were to tell the truth it might be something on this order, "I am tardy because I hate school and loafed around as long as I could." Such a clear statement of the truth would be immediately denounced as impudent. The child must give an excuse. So he is forced to invent some such lie as, "We had late breakfast" or "The

clock was wrong." These are acceptable to most teachers because they have the appearance of rationality.

Such reasons are usually not downright lies. They are a distortion of emphasis, giving too much weight to unimportant causal factors. Each thought or act is not the product of one cause; many different circumstances unite to bring about any particular action or attitude. For a person to search out and list all these causes is well-nigh impossible. In addition, the various causes probably do not operate separately, but each influences the others and all may be modified by the organism itself. Consequently, which one deserves the most weight is an unanswerable question. Why should he not bring forth the element that places his conduct in the most desirable light? Most rationalizations, far from being falsehoods, are simply a false emphasis upon the particular causal factors that meet with the greatest personal or social approval. Since reason is exalted and emotion disparaged a person learns that if he wishes to gain the good will of his fellows he must emphasize those factors that sound rational.

For all our conduct and all our attitudes we can usually give an acceptable explanation. The outsider, seeing our behavior from a different angle, can usually find some explanation different from our own. If the outsider dislikes us, he can find a motive that is derogatory, while we are convinced that our motivation in a particular instance was of the noblest type. The truth is that both sets of motives actuate us. What, then, is the significance of rationalization? It lies in the fact that, when we begin to fear that we have been motivated too much by selfish or ignoble impulses, we tend to place greater stress on whatever noble motives we can find so that we may avoid reproach either from others or ourselves.

Most reasoning, as has been shown pretty clearly, has some affective background and hence comes under our definition of rationalization. Formal logic and mathematical reasoning attempt to get rid of the affective factors by reducing all the steps in the reasoning process to abstract symbols which in themselves have not enough personal relationship to have much affect. Cold logic and mathematical formulae are hard, dry things to most persons as is evidenced by the reactions of

many students to such studies. But even these formulae can be filled with affective relationships and so partake of the characteristics of rationalization. If a scientist is bent on proving a certain hypothesis, the mathematics and logic used in the effort become alive with meaning, and if he is not careful, he is likely to be biased by his zeal for his theory.

If a person takes himself too seriously and uses logic and reason to defend himself in some weakness which is extremely vital to his self-esteem, then reason ceases to be a game. And herein lies the danger. Such a person stakes his all on the validity and superiority of his logic, just as the gambler stakes his on the horse he chooses to win. The person who becomes too serious in using his reason thereby becomes a poor sport in the game of reasoning. His technique becomes distorted, he does not play fairly. Abnormal delusions are based on this process of faulty reason backed by too great a desire for certain things to be true.

Rationalization serves an additional purpose. It distracts the attention of outsiders from the cause of the affect behind the reasoning to the reasoning process itself. Thus the rationalizer escapes with unsuspected motives. The motive that actuates the small boy in his search for reasons why he should not go to the store for a loaf of bread may but scantily cover the fact that he does not want to go. But even so it is remarkable how well he succeeds in giving the impression that he is only too willing to go but these other things make it well-nigh impossible. It is raining, his shoes leak, and his rubbers have holes in them. Besides, he has just recovered from a cold and he does not want to catch another. How long does the clever boy have to keep up this barrage of excuses before his mother gives in? She is diverted from the fact that he does not want to go and begins to weigh his arguments. She fails to realize that "by reason" he can make the weakest case look worthy.

This mother, instead of listening to the arguments, would get to the root of the thing much more quickly by saying to herself, "Now, Johnny does not want to go to the store. That is evident from his search for reasons why he should not go. How can I make him *want* to go?" By following this method the chances are in her favor. In many homes the family relations so set the stage that children will want to go (or at

least not object), so that they are not tempted to search for arguments.

Now all this has application to the individual who has errors of belief. He wants to believe a certain thing. He must believe it for the sake of his personal mental peace and harmony. He dares not tell his friends or himself that he wants to believe the thing but must make it appear rational. Consequently, he hunts for reasons with the same motivation as the boy who hunts for reasons why he should not go to the store. He succeeds in diverting the attention of himself and others from the real motive to the consideration of the validity of his arguments and thus he escapes. In this we have the pith of delusions as such. To cure a delusion we must make the individual *want* to believe something else just as the mother can, if she wants to, make the boy want to go to the store. The one who is handling a case of delusion does not succeed in changing it by argument any more than the mother will succeed in reasoning with the small boy.

212. Delusions as defense mechanisms. The reader who has carefully studied the foregoing discussion of judgment, projection, and rationalization will see that delusions are fundamentally defense mechanisms. The individual always has a personal interest in maintaining the belief set forth. Whatever other factors may enter into the causal complex, this affective background is always present and should be considered of prime importance to our understanding of the nature of the delusion.

The primary consideration is the fact that the subject has some belief that he is concerned to maintain at all costs. Actuated by this desire, he will reach out and grasp anything that happens to be at hand and bend it to serve his purpose. If reason happens to be effective, he will use reason. He will support his reason with any factor that the immediate situation suggests. The particular features of his situation that he grasps are but incidents in his main endeavor and should never be exalted to the position of prime cause. In order to see how a person grasps for material to support his beliefs, let us revert to our illustration of the boy evading the errand to the store. We understand in the case of the boy that the central thing is the desire to shirk the errand. His arguments

are endeavors to support this central desire. He gropes about to find some excuse and chances upon the fact that his rubbers have holes in them. This gives him a good basis of support, but none of us would be foolish enough to believe that the holes in the rubbers are the cause of his rationalizations. We know that to provide him with a sound pair of rubbers will not make him want to go to the store. It would simply force him to find some other argument, some other excuse.

To be diverted to the content of a delusion is just as useless. Remove the foundation from the argument of the deluded person and he will either glibly get another argument or tell you he believes the delusion nevertheless. If you attend to the thing he is arguing about, you will not see his purpose in arguing. If you attend to his supposed persecutors, you will not pay too much attention to him. If you examine him for the fictitious bodily disease, you will not pay too much attention to his mental affairs. His delusion is a defense mechanism: do not let him outwit you with it. The delusion is a symptom pointing to some distorted affect, and, as an indicator of this affect, it is of value. But if all you see is the delusion, you lose sight of the fact that it is indicative of a desire that the patient is attempting to conceal. When you lose sight of the basic condition and are diverted to the delusion itself you are not only blinding yourself but you are tempting the patient to adhere with greater energy to his delusion.

213. Intellectual deterioration as a factor in delusions. An individual who has had normal intellectual powers and who, because of deterioration brought on by some disease, old age, or other cause, finds his ability to solve the ordinary problems of life waning, will grasp anything that will make his failing powers look less weak. Consequently, in diseases causing cerebral degeneration, such as chronic alcoholism, senile deterioration, and paresis, delusions play a large part in the symptom picture. Quite likely, these same persons, without the stress caused by the loss of mental powers, would never have been deluded. At the same time others who have the same diseases do not develop such delusions. The disease therefore appears to be an important contributing factor be-

cause it supplies a foundation upon which the person may build a secondary structure of delusions or other defense mechanisms. Whether his defense turns out to be a delusional system or some other symptom will depend upon the personality of the patient.

In other words, the delusions do not come full grown with the organic disease. They grow because they offer to the patient a way of escape from impending failure. Delusions of grandeur are quite common in cases of paresis, and delusions of jealousy occur with frequency in chronic alcoholism.

214. Somatic material for delusions. Often the delusions are concerned with the individual's own body. He believes that he has no stomach, no heart, that his vital organs are displaced, that he has some disease, such as tuberculosis or cancer. The question to be asked in any such delusion is: Why did the person come to give such overvaluation to the particular part of the body or the disease selected?

An illustration will make this clear. A certain patient asserted that she had heart disease and complained of palpitation with queer pains in her heart. Emphatic statements by the physician that she had no disease and the display of electrocardiograms to convince her that her heart action was normal were of no avail in changing her belief. She contended that the physicians knew she was ill and were trying to hide the fact from her. She claimed that one of them had given himself away one day when he asked her, "What is eating you?" He had facetiously asked this question at a time when she appeared to be despondent; she snatched it as evidence that he could perceive the disease organisms consuming her.

Further questioning elicited the fact that she was convinced that her heart trouble was the symptom of a venereal disease. Although her history showed that she never had suffered from any such disease, she insisted that she had been and still was infected. Why should she maintain such a belief? Fear had occupied an important place in her moral training. Any temptation had been suppressed by a fear of the consequences. With continuing temptations she piled up the fear of disease to combat the temptations until the fears dom-

inated her thinking. She overcame her temptations, at first, by a fear of disease and, finally, by actually believing that she was suffering from the effects of acts which she never had committed. In short, the belief that she had a disease enabled this woman to maintain her moral integrity and, at the same time, distract the attention of outsiders from her real conflict.

215. Environmental material. The term *allopsychic* has been used to designate delusions that refer primarily to the influence of other persons or things upon the patient. In the section on projection we have seen how the patient can become self-centered to the extent that he sees in the attitudes of others or in the arrangement of events designs upon his own personal integrity and welfare. In these cases the external events merely give the patient an opportunity to escape the consequences of some internal conflict. He learns, probably early in life, how satisfying it is to place the blame for his own troubles upon other persons or external events. In addition, he finds that the attention of others can be diverted from his own personal problems by involving them in an effort to fix the blame. Finally, he deceives himself by joining the hunt for his fictitious enemies. The only way to comprehend the significance of a delusion is to break through the rational defense, to delve behind the content of the delusion, and to discover the function that the delusion serves in the life of the patient.

XLVII. DESCRIPTION OF DELUSIONS

In general organization, delusions vary from those that sound true to those that have but little evidence of verity. Upon hearing a patient recite a tale in line with the former type the hearer is constrained to believe his story true and only through contradictory evidence is it found to be fictitious. From this extreme we have all degrees to the type that appears upon the very surface to be unsound.

216. Systematized delusions. In systematized delusions the affective element is kept well in the background. All facts are coordinated and woven into the whole scheme in a perfectly logical fashion. Evidence is carefully weighed, and even a clever lawyer would have difficulty in finding any weak spot in the story.

The plausibility is shown by the following story told by a deluded individual. He was a fine-appearing young man of about twenty-five who came to this country when about fourteen years old and got a job as a gardener for a wealthy family. Everything went well until he was about twenty-two years old. At that time he states that a wealthy married woman, who lived near to the place where he worked, became enamored of him. He confesses that he was lured by her into several secret meetings. He wrote to her and says that she wrote several letters to him, which he destroyed. He asserts that the woman then became tired of him and wanted to get rid of him. In order to save her name she told scandalous tales about him. He, in retaliation for her supposed maltreatment, wrote to a number of the woman's relatives, including her husband, defending himself. These letters were shown to the woman who denied any relationship or knowledge of the man, and he was consequently taken into custody and eventually placed in an institution.

This certainly is a plausible story and one might easily be led to believe it. The woman denied that she had ever had any meetings with the man, that she had ever written any letters to him. The situation resolved itself into a balance of one person's word against another's. The thing that indicates that the man's story might be a delusion is his lack of discretion. On a mere suspicion he wrote to the woman's husband and relatives. Later he showed the same lack of judgment. After the first hearing of the case he had been acquitted, and the matter was dropped. But he continued to write letters and to talk indiscriminately about the situation from his point of view. This continuation of indiscreet letter writing and talking is what led to his commitment. It can be seen that there are possibilities of truth on both sides of such a story, and some may be inclined to take the side of the patient. Indiscretion is very slender evidence upon which to base an adverse decision.

We can imagine some reader's becoming perturbed by this case. What if this man should have been innocent? Why should he be committed to an institution until it is proved that he is deluded? Maybe the woman was a clever liar. In answer to such a question we may say that people are not

committed because they are deluded. Hundreds of people who are in active life have delusions of one sort or another. Some are maltreated but learn to adjust to maltreatment. A man (or a woman) is placed in custody because he is a social menace—he is likely to cause injury to himself or others. This man was confined because he could not learn the lesson that we all must learn—we must live in peace with others even if they are not so perfect as they might be. He accused the woman to hide his own weakness.

217. Unsystematized delusions. This type of delusion has a lesser degree of internal consistency. The clever listener can find flaws which indicate to him that the story is at least partly fiction. A good test comes when the listener begins to argue with the deluded person. The one with the systematized delusion will defend himself, and do it well, at every point. He cannot be trapped by logic or debate. The one with the unsystematized delusion may also attempt to defend his delusion, but he is less capable of doing so, and when caught in a trap is likely to shrug his shoulders with indifference. If you do not believe his story he cannot help it; it is true and that ends it. The following is a typical delusion of this type. After the first question the patient gave all the rest of this story without question or interruption. Her statements are given exactly as she uttered them. Question: "How did you get into this hospital?"

"I went to the police woman about some talk going on around about me. It started in St. Paul and I went to the county attorney about it. He did not want to be bothered about it, he thought that I was just trying to make trouble so I went to the police woman. I think they are in together, because I couldn't get any help from her, so I attempted to come here to get some work at the telephone company. In the train I noticed that two men kept watching me as though they had orders to watch me. They thought that they could keep me from getting a position here. They told the telephone company. I was staying nights with my girl friend, her husband was working and she was pregnant and he called up. I was going to a candy shop to apply for a job. This policeman standing on the corner started nagging at me, because I was downtown and the man I went with sells moonshine and he has been living with a bad woman and when I came out of the candy store he started nagging at me. I wanted to go back to the store and I had forgotten the name of the place and the street and so I had to go by the corner again where the policeman was. When I passed him again I was afraid that he was going to say something

and he shouted, 'Go on home' like that to me. I began to cross the street and there was no traffic coming so I got across and I wanted to take the street car to get out of the way because he made me feel so bad but when the street car came the conductor would not let me get on. He said he wasn't taking passengers. The policeman was watching me and I had to cross the street again. Then when I came to the train from Minneapolis there were two policemen in the mail train that kept watch on me. They have been watching me since December 8th [it was then the latter part of January]. When I go into the stores the clerks say to each other, 'She is not any crazier than I am.' They talk about the girl with the green coat. [The patient was dressed in green.] When I was in church one time I heard them talk about the girl with the green coat. Everyone is talking about me, something about being crazy. I asked everybody but could not find out why they all talked about me. It all happened when I first crossed the street. I smiled at the officer so he would not think I had anything against him or have it in for him. He shouted, 'You're crazy.' That made me feel bad."

Obviously, the delusion of this patient is centered around a dominant affect. So wrapped up is she in this, that her story is somewhat incoherent and she wanders off to logically unrelated items. All these things may be part of the emotional situation back of her trouble. Her concern is to tell all about it rather than to convince the hearer that her story is logically sound.

218. Irrational and bizarre delusions. In this type no attempt is made to relate the different parts of the story. The patient will tell disconnected incidents and make little attempt to relate them to any central scheme. For example, a patient is sure that his enemies are trying to poison him. How does he know? He proceeds to give evidence, as: "See that steam coming around the corner of the building. That is poison gas that they are producing and sending out so that it will come into my window and poison me." (The steam is from an exhaust pipe in the heating system of the hospital.)

The main distinction between this and the previous types is that the former delusions, although disconnected, are not impossibilities. In the latter case the delusions are absurd and the explanations preposterous. However, there are no sharp distinctions between the different types; they all shade off into each other.

Some delusions are so bizarre as to present the extreme of irrationality and come only in case of serious mental de-

terioration. The outpouring from such patients is wholly ridiculous. A patient will tell you that he is worth millions of dollars, no,—trillions and trillions of dollars. Can he sing? He has a voice that will charm millions. When he sings everybody in the universe can hear him and stops to listen. If you are not careful he will begin to demonstrate his stentorian skill. Has he any children? Thousands of them. So it goes in any field you strike. His productions are most fantastic and bizarre, and he is usually exhibited to visitors of the institution where he is kept. The following is a transcript from the answer of such a patient to the question: "What brought you here?"

"I was just sitting there with the officials of the universities and the senators and all the farmers' associations of all nations. I was there communicating with them all. They all drifted to my corpse and I explained to them what they wanted to know. I translated things for them. I told them how to run their locomotives so that they can save coal. This compressed air tightens up the valves so the men can breathe easier. Coke and waste will come to an end but air will never come to an end. To operate, they get water and compressed air and put it into a fire box so it can form steam in the boiler. This makes air pressure, and it works and then they use it in cooking pressure. All the senators were there and President Coolidge and George Brittain and William the Great and the President of France. All of them in the same clique. Then two officers walked into the lobby and escorted me to the Chicago Avenue police station and they let me talk to the judge."

We have instanced a number of delusions as they appear in psychopathic patients because in such cases the nature of the delusions stand out in bold relief. But the student must not suppose for an instant that such extreme delusions spring forth fully developed. They probably begin in minor forms as the child develops. The teacher, if she attempts to understand the meaning of distorted thinking, can often detect such tendencies in her pupils. The thing to keep in mind is that a delusion is not corrected by argument. Logical errors are not the real foundation of delusions. Do not argue against a cherished belief; provide a better one.

XLVIII. CONTENT OF DELUSIONS

Almost anything that comes within the range of human experience may be incorporated as a part of the content of delusions. This is so true that one who studies abnormal persons can expect continued surprise in the way of delusional stories told by the patients. There is enough uniformity in some general trends to enable us to classify them as to content, but it must be clearly understood that these classes are by no means mutually exclusive. All degrees and combinations exist.

219. **Delusions of self-accusation.** Delusions of self-accusation or delusions of sin are likely to be accompaniments of emotional depression, especially the depressions coming on at the menopause. Individuals at this period of life may look back upon their past life and bring up some event that has long been buried and focus upon it as the cause of their ruin. As an instance of this type of delusion we may cite the case of a man who was brought to the hospital after he had attempted to kill his wife and himself. The officers were called just in time to prevent this double tragedy. He was perfectly rational in every respect except on the subject of his sinfulness. He had been a mail carrier for thirty-six years, had a son of seventeen and was seemingly well adjusted when this delusion took possession of him. To show the influence of this delusion upon his thinking we will repeat a conversation held with him:

Doctor: What is the trouble with you?

Patient: My trouble? It is terrible. I have been a bad man.

Doctor: What is going to happen to you when you die?

Patient: I don't think I know. I hope the Lord will forgive me. I am afraid. I am afraid. (This was accompanied with groans.)

Doctor: What will happen to you then if you die?

Patient: I suppose I will be condemned.

Doctor: Do you feel condemned now?

Patient: I do. I feel that my sins are such that they will never be forgiven.

Doctor: What would you say if I said we will turn you into prison for the rest of your life? Do you think that would be just?

Patient: I think it would be hard but I suppose it would be just.

Doctor: How about hanging you? Do you think that would be adequate punishment?

Patient: Well, that would be hard but I think I deserve it.

Doctor: What is this terrible sin that you deserve to be hanged for or thrown into jail for the rest of your life for and that will never be forgiven?

Patient: I was an immoral man.

Doctor: How long ago was that?

Patient: Thirty-six or forty years.

Doctor: Was it that long ago?

Patient: Yes, I did not realize it was so long ago till just now.

Doctor: You have been good since then, haven't you?

Patient: Yes, absolutely.

With sighs and groans this man tells that he has done a terrible thing, believes that he is condemned in this life, is not going to be forgiven in the next life and will be condemned to eternal punishment. But when you question him, you find that the thing about which he is sorrowful happened thirty-six or forty years ago, and for all the intervening years he has been living a perfectly happy life, not worrying about his sins. Now after all these years he revives this incident and attempts to commit suicide.

It is pretty evident that the story of the sin and the emphasis placed upon it is an attempt to explain his emotional depression. We should not assume that the sin caused the depression. If the latter were the case he would not postpone his sorrow for forty years. In many such cases the sin that is brought forward is not even true. If there is no specific misdeed that can be remembered, such patients may say that they are to be condemned because they failed to do something that they should have done. Since these delusions are not an outgrowth of the personality of the patient but are seemingly an extraneous growth they are likely to be transient. They tend to disappear with recovery from the depression.

220. Hypochondriacal delusions. The term *hypochondria* means a lack of the feeling of well-being. A patient with a hypochondriacal delusion complains of all sorts of illnesses, pains, and aches which are so grotesque as to be obviously without foundation. Others complain of queer sensations, dizziness, debility, and pernicious diseases. Usually they do not try to restrict their complaints to any logical group of symptoms but have all the symptoms that one might suggest to them. Their organs are wasting away; they know that they cannot recover. They may attempt to give a rational cause for their trouble, usually blaming it on some sort of excess, often of a sexual sort. The fact that they are in fine physical condition and eat heartily has no bearing on their

complaints. They can be made to complain of any disease by the mere mention of it. Such persons are abnormally concerned with analyzing their organic condition, and hence, the hypochondriasis may be interpreted as excessive remorse for having failed to live as they should.

221. Nihilistic delusions. These delusions may take the form of a general negation of all things. Nothing exists, the world is all a vapor, there is no God, the patient himself does not exist, he has no feeling, no life, no name, he is not a man, his stomach is gone, and so on. One patient said that she was dead. Asked who this was who was talking to the doctor, she replied that she was just a phantom of her real self, which was dead and did not exist. She said that her talking or eating was an illusion. When asked how she knew that she did not exist, she said that there was no feeling in her being, and that when she talked she was like a machine in which one might place a penny and have sounds produced mechanically. She stated that she had no fear of anything, no love for anything or anybody. Death could not come to her because she had no life.

In many cases such delusions may accompany profound deterioration, but this woman was intelligent and passed a superior intelligence examination. We cannot be sure as to the background of this woman's delusion, but a plausible hypothesis is that her emotional life had been an offense to her and that she escaped from the unpleasant task of acknowledging such a condition by an avowal that she had no feelings or even any existence.

222. Delusions of persecution. Delusions of persecution are probably the most common variety. Westphal (in Storring, 24) gives a very good description of how these delusions may flourish in a soil of hypersensitivity:

Just as a sane person on first wearing a new uniform, let us say, or on receiving a title, feels as if the fact must be known to every stranger he meets in the street—feels as if they are all noticing the change in him, and regarding him with curiosity, admiration, or envy—so too the paranoic (a person whose main symptom consists of delusions of persecution) thinks that everyone must be struck by the change which he feels is taking place in himself. It does not take long before their behavior towards him does really seem different from what it used to be; they look at him queerly, they are always watching him, and so on. He "projects" the

alteration of his self into the world about him. Thus the specific mark of paranoid delusions will consist in the belief that other people are taking unusual notice of one. Now even a sane person does not as a rule like other people to exhibit over-much curiosity about him. Far more will it be unpleasant to one in a morbid condition to have others always watching him. He will come to imagine a background of hostility behind this unusual attention, and so his delusions of being watched turn into delusions of injury or persecution.

This sensitiveness to the regard of others furnishes the soil in which delusions of persecution grow, but there must be something more than the mere feeling that one is being watched. What is it that gives people the feeling that the glances of others have a sinister significance? Why do they take this as evidence that they are being injured by these same persons? Quite likely, their interpretation is an attempt to explain their failure in some particular, to account for their frustrated wishes, their being overcome by the things they dread. These people, who, they think, are watching them, they also believe to be cognizant of their weaknesses. They assume that all these outsiders are vitally interested in them and are watching their failures with secret glee. In other words, these patients are too conceited to admit that they themselves have failed. Their failure is due to the machinations of their persecutors. In this way they avoid the unpleasant feelings that come with an admission of defeat. To blame others is much easier than to accept the onus of one's own failure.

Some authors differentiate *delusions of influence and control* from delusions of persecution. They have much in common. Some patients not only believe that they are being persecuted, being watched, being made the scapegoat by their enemies, but they think that their thoughts and actions are actually controlled by these outsiders. Hallucinations of the outsider or of his voice may accompany such delusions, but not necessarily. The mechanism by which the patient is influenced or controlled may not be explained at all, or it may be explained in some mystical or allegedly telepathic or hypnotic fashion. He complains that he has no thoughts of his own and is forced to do some menial or onerous tasks, not because someone is standing over him and coercing him, but because his actual actions are controlled by another.

223. **Delusions of grandeur.** Some delusions of grandeur take the most bizarre and senseless form. At one time these were regarded as a distinguishing symptom of paresis, a disease in which the main trouble is a gross deterioration of the brain substance. Today such delusions are quite commonly ascribed to an overcompensation for a growing weakness, usually of mental powers. Where mental weakness develops in an individual who has been very efficient and capable, especially where the deterioration has gone so far that he fails to see things in their true proportions, the patient finds it a most satisfying procedure to assume that he is a great individual. The pyramiding of delusions of the most absurd sort serves to compensate for the increasing spread of the destructive process.

Where there is little or no intellectual deterioration, delusions of grandeur take the form of distortion of the wish to be great. Such a subject, instead of saying that he would *like* to be a certain great individual, states that he *is* that individual. "Fish stories" and other tales of personal exploits so common with young people, and some older ones, are of this order. A common form this distortion may take is the delusion of inventive genius. Sometimes the ideas of such persons are by no means bad; sometimes they are rather childish.

Delusions of noble ancestry are also common. These are built upon the dream of childhood—the wish that one had been born of noble parents. A careful study shows that a rather large number of persons have at one time or another had a feeling that perhaps their parents are not their real ones. If this is so perhaps they came from nobler stock, perhaps from a royal family. Wouldn't it be great if that were the case! Then they begin to look for evidence and all too often seem to find it. Their dispositions, appearances, tastes are so different from those of their parents. They must come from different stock! Finally they convince themselves that they do. Once started on this line, to be descended from ordinary mortals does not satisfy, they are of divine origin, they are sons of God. Almost every hospital has its groups of Messiahs, Napoleons, Lincolns, and prophets. An interesting feature of these delusions is that these noble per-

sonages will scrub the floor or do with very little protest any other menial work to which they are assigned. Ask them how it can be that Napoleon is scrubbing the floor and they will reply with an indifferent shrug that the poor benighted souls about them do not recognize their greatness.

The question, in the case of the deluded person trying to convince others of the validity of his beliefs, is *why* does the patient argue, rather than are his arguments *true*. If he accuses himself of sinful conduct, invents hypothetical illnesses, claims to be non-existent, accuses others of persecuting him, or claims to be some great individual, do not be deceived into assuming that his reasoning powers have gone wrong. He is merely using reason (or a caricature of reason) to hide his real difficulty. Do not waste energy in an attempt to refute his arguments; search for the motive which they hide.

224. Importance of emotions in development of delusions.

Let us recapitulate. The dictionary defines a delusion as a persistent belief in something that has no existence in fact. Now, why should one persistently believe what is not true? Two factors are involved in belief, an intellectual factor and an emotional one. Are both to blame in the formation of a delusion? The answer to this question will determine our method of dealing with delusions in our efforts to correct them.

A judgment, which is a formal opinion or decision, results from an impartial consideration of all known relevant facts. It is a tentative conclusion, subject to revision whenever new evidence is discovered. Belief in such a judgment merely registers confidence in the integrity of the intellectual processes involved in formulating the judgment. Should a particular judgment prove to be satisfying to a person, his confidence in it will be enhanced because of this pleasure, and to his intellectual preference will be added an emotional bias. It is this emotional preference for a judgment that supplies the foundation for the development of delusions.

An intellectual belief will persist only so long as objective evidence makes it more tenable than any other belief; an emotional belief tends to last as long as it is more satisfying than any other. Consequently, tenacity in adhering to a belief is a bad sign; it signifies an emotional preference for the

belief rather than an unbiased appraisal of facts. False judgments are normal, but the overwhelming desire to believe either a truth or a falsehood is a dangerous attitude.

Delusions are errors of belief and not errors of reason. Pathological delusions arise from the tenacious wish to believe and not from any error in the reasoning process. The insistent wish to believe may stimulate a patient to use arguments that are irrelevant and foolish; but such a misuse of reasoning merely provides additional evidence that the patient is determined to maintain his belief at all costs. The patient can reason correctly; but he would rather distort facts and twist logic than change his belief. Furthermore, if he can engage others in involved arguments the true nature of his wish to believe may not be discovered. The arguing of the deluded person is a defense device which the patient uses to hide his real difficulty.

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CHAPTER X

MOTOR DISORDERS

The student of human nature must be able to interpret motor behavior as the expression of certain aspects of personality. Since some motor disorders can be the direct result of physical injuries, we shall give a brief description of a few of these in order to provide a clear distinction between them and the functional motor disorders. We shall endeavor to show that functional motor disorders indicate personality difficulties. The correction of such disorders involves a personality readjustment, the direction of which is often indicated in the motor symptom itself. In other words, motor disorders are often defense mechanisms designed to hide an inner conflict. One must learn how to get behind the disguise to the real trouble.

225. Illustration of functional motor disorder.

Dr. Brown-Séquard relates a remarkable case of ecstatic catalepsy in a girl whom he was called in to see. She lived in Paris, close to the Church of St. Sulpice, and every Sunday morning at eight o'clock, when the bell began to ring, she used at once to rise from her bed, mount the edge of the bedstead, and stand there on tip-toe until the bell sounded at eight in the evening, when she returned to her bed. The board on which she stood was curved and polished, and it would have been impossible for the most athletic man to have remained on it in such a position for more than a few minutes at a time. While standing there, she was utterly unconscious of her surroundings, and continued murmuring prayers to the Virgin all the time, her hands clasped, her eyes fixed, and head slightly bent. Some of the bystanders were sceptical, and Dr. Brown-Séquard, to put her to the test, applied a strong, interrupted current to her face. She showed no signs of pain; but the muscles reacted energetically, and her intonation was therefore slightly affected. The girl was weak and anemic, and was so thoroughly exhausted by her Sunday exertions, that the remainder of the week she could only lie helpless in her bed. (Cutten, 9)

The purpose of this chapter will be to show that even such unusual conduct has meaning. We should not be satisfied with designating an act as unusual. We should strive to know why a person chooses, and how he is able, to do such bizarre things.

XLIX. GENERAL NATURE OF MOTOR RESPONSES

Motor behavior is the last link in the chain of neural activity. Actions, consequently, cannot be considered in isolation. They depend upon the stimulations that the organism has received, the way in which the various stimuli have been organized in the central mechanism, both cerebral and autonomic, as well as upon the motor mechanism itself. We must learn why a person acts as he does.

226. Importance of interpretation of motor responses. Often the integrity of the sensory and central processes can be determined only by the behavior of the individual. The person who hallucinates may respond to those hallucinations as though they were real perceptions. "Thus, a patient named Mantel, who was locked in his room, repeatedly heard the words: 'Mantel, thou strong hero.' Whereupon he reacted by demolishing his room to show his annoyers that he was really strong." (Bleuler, 2, p. 142). His actions would have been inexplicable without a knowledge of his hallucinations.

Similarly, our knowledge of central neural processes depends upon our observation and interpretation of the conduct of individuals. If a person has a delusion that he is being persecuted we shall never know it unless his motor organism informs us of the fact. We have no magic microscopes to see what is going on inside of a man's brain. He may take steps to defend himself, he may act as though he were suspicious of others, or he may tell us about his suspicions. From the things he does and says we must infer what is going on.

In view of such intricate mental processes, it may be seen that all abnormal psychology is a study of behavior of one sort or another. In this chapter our aim will be to indicate the significance of the motor abnormalities that may be observed—to derive the meaning that lies behind the overt expressions that we see.

227. Similar behavior may result from different causes. One may make the same response as a result of a number of situations. This is due to the fact that the same motor mechanism may be actuated by different causal combinations. At one time we use our hand to fight, at another time to grasp. At other times we use the same hand to write, to adjust our clothing, to emphasize what we are saying, or to carry food to our mouths. We never realize how much we do use it

and for what varied purposes until it becomes disabled and we are forced to act without it.

If we understand clearly the significance of the fact that the same motor organism serves a multiplicity of functions, we shall understand why we cannot tell immediately the significance of any specific motor process without a knowledge of some concomitant circumstances. If we see a man move his finger and know none of the accompanying circumstances, we cannot answer the question, "Why did he move his finger?" The only way to determine just what is back of a bit of behavior is to change some of the circumstances just as one would change conditions in a definite experiment. By such controlled change and observation we can arrive at the significant factor behind any bit of conduct.

This should serve as a warning to the student never to attempt to explain behavior from hearsay or from a superficial observation of one or two manifestations of an act. Report is notably inaccurate because of the perceptual errors of the observer, the bias of those carrying the report, and the distortions that result from the telling. This is especially likely to be the case when a bit of peculiar conduct is reported. The teacher or clinician wants to arrive at the reason for an act, and he surely cannot do it if all he has is a distorted narrative. Furthermore, when once we discover the cause of some piece of behavior in one person there arises a temptation to explain the same or similar conduct in another person in the same manner. The student of abnormal psychology must be on his guard continually against explanation by analogies of this sort.

Sherrington has shown by experiment how a number of central impulses may all try to get control of what he calls the "final common path." What the organism finally does depends upon an integration and balancing of all the stimuli, both internal and external, that are operative at the time. One may have an impulse to laugh at the same time that he has another to cry. Which will he do? One impulse will finally gain the ascendancy and will dominate the conduct.

We can make this clear by an illustration. The author once attended a moving picture in which a number of children were subjected to persecution of such an extreme character

that all those in the audience were very much aroused emotionally. The tension grew until the climax of horror was reached when the children were trying to escape through a wilderness from their tormentor. In this scene they were all out on a rotten log over a stream filled with alligators who reached up in their efforts to get the children. The log began to give way and the jaws of the alligators came nearer and nearer to the struggling children. The audience gasped with horror for a time and finally broke out in boisterous laughter. What had happened to them? The horror of the scene was so great that they had to modify their reaction. As their emotional tension became greater and greater it became so unendurable that it finally broke through and uncontrollable laughter resulted. If a stranger had come in at that moment he would have been astounded to see an audience laughing boisterously when presented with such a gruesome scene. Such extraordinary conduct could not be explained without a knowledge of the complete situation.

This illustrates what is happening with us all the time. The various factors operative at one time produce an incessant conflict; they are all struggling for control. When we perform a certain act, it is because certain forces gain the ascendancy and dominate our behavior. In the next instant a contradictory set or at least a different set may become supreme. In other words, while the final behavior may appear relatively simple, the forces behind the behavior are always more complex than appearances would suggest. Our question, "Why did he do that?" must be modified to, "What factors were operative at this particular time to make the person do this?" Several people in the same situation may laugh from entirely different motives. One may be responding to a joke that he has heard, another may not have seen the point but be laughing so that the others in the party will not discover that he failed to see the point, another may have been thinking of something entirely remote and laugh mechanically or in response to his own thoughts, while a fourth may have been thinking of a joke that he wants to tell and laughs at his own pet story. The same general response may result from different stimuli although the difference may not be readily apparent.

On the other hand the same situation—so far as we can observe it—may produce entirely different reactions in different persons. If the joke happens to “be on us” it ceases to be funny and we may become angry instead of amused. An adequate interpretation of any bit of conduct depends upon a knowledge of the complete setting of the act.

228. **Various sources of motor disorders.** The cause of a motor disorder may be at any point along the sensory-motor arc from the sensory organ to the motor organ. It may be in the motor organ itself, in the efferent fibers leading to the motor organ, in the reflex centers, or in the higher coordinating centers. It is usually pretty easy to discover whether the disturbance is on the sensory side of the arc because we can stimulate the motor apparatus by means of different sensory stimuli; and of course, if the motor disturbance is normal with one type of stimulus, and deranged with another, the trouble is obviously not in the motor apparatus.

The type of motor disturbance that holds the greatest interest for us is the one caused by central factors. However, these cannot be understood unless we know something of the nature of those depending upon the reflex centers and upon the motor organs themselves. We shall therefore take up our study by investigating first disorders of the motor mechanism, and then disorders of the more complex expressive functions.

L. DISORDERS OF THE MOTOR MECHANISM

Only those motor disorders will be discussed which have a bearing upon the interpretation of mental processes. Some of these have value in excluding the possibility of a functional background. This is especially true of reflexes and muscle tonus. Paralyses, tremors, incoordination, and convulsive movements may be either functional or organic, and, for that reason, the psychologist should be able to distinguish them.

229. **Reflexes.** The examination of the reflexes is most important in any case of disordered motor function. The psychologist should be familiar with the most important reflexes so that he can test them. Should he find them disordered he can be sure that the patient should have a complete neurological examination before any mental re-education is attempted. If, on the other hand, the reflexes

are normal, the examiner should be encouraged to search for the root of the trouble in some of the higher personality integrations. Of course, abnormal reflexes do not conversely indicate that the higher functions are intact. One cannot measure mental integrity by testing the reflexes.

Reflexes are usually divided roughly into two classes. The superficial reflexes are those that result from stimulation of the nerves in the skin, as by touching, scratching, or pinching. The deep reflexes are those that result from a stimulation of the deeper nerves, chiefly those of the muscles. Most of the latter reflexes are elicited by tapping a tendon. Such a tap produces a quick pull on the muscle, then sensory stimulation from this pull is carried to the nerve center and a reflex excitation causes a contraction of the muscle.

1. *Superficial reflexes.* Some of the most easily examined superficial reflexes include the corneal and conjunctival (lid) reflexes of the eye, the pharyngeal or palatal reflex of the throat, the cilio spinal reflex in which the pupils of the eyes dilate to a pinch on the nape of the neck, and the plantar reflex which results in the flexion of all the toes to a stroking of the sole of the foot. Except in young infants an extending of the great toe instead of a flexion should be regarded with suspicion of neural involvement; it is known as the Babinski sign.

2. *Deep reflexes.* The two most important of the deep reflexes are the patellar, or knee jerk, and the pupillary. The patellar is elicited by tapping the patellar tendon and consists of the contraction (however slight) of the large muscle on the front of the thigh (the quadriceps). The pupillary reflex occurs to light, an increase of light causing a decrease in the size of the pupil, and to a change from looking at a far to a near object under the same illumination. The pupils should contract slightly when the near object is viewed after the far one. The reflex to far and near objects may be present but the one to light absent, a condition known as "Argyll-Robertson" pupil. Both superficial and deep reflexes may be either organic or functional, and the psychologist depends on the physician to tell him whether organic involvement is present.

230. Tonus. Muscle tonus is a condition of partial contraction of the muscle which may be maintained for long periods of time with very little consumption of energy and with very little fatigue. It is the normal condition of most muscles of the body being most obvious in the muscles of the limbs and trunk in ordinary waking life. Tonus is a reflex phenomenon depending upon the stimulation coming from the sensory nerves in the muscles.

1. *Hypertonicity.* In certain conditions, notably emotional excitement, tonus is increased. The muscles become tense and remain so for long periods of time. This increase in tonus is normally a preparation for quickened activity. When the activity is inhibited, the person may have an abnormal degree of tension which is readily recognized as a sign of emotional excitement. Hypertonicity may also be caused by some physical irritation or by overactivity of the thyroid gland.

2. *Atonicity.* This describes the person who shows a marked degree of lassitude. Atonicity may be exhibited locally or may involve the whole organism. It is usually found in cases of emotional apathy or depression. The subjects may make no active movements for long periods. They may be handled like puppets, pushed hither and thither with no normal resistance to such treatment.

Sometimes a glandular condition is at the basis of such disorders and this can be determined only by definite laboratory tests. Sometimes a nutritional factor accounts for a lack of tonus. If all such examinations prove negative, one would do well to look into the emotional life of the person.

231. Hyperkinetic motor disorders. You will remember that the prefix *hyper-* indicates an increase-in or more-of the word to which it is prefixed. *Kinesis* means movement, so that *hyperkinesis* means an exaggerated movement.

1. *Tremors and spasms.* Tremors are small, regular, rhythmical contractions of small muscle groups, such as are seen in the "chattering teeth" of a person who is cold, or the shaking of a person's forearms and hands when he is anxious or frightened to a serious degree or has the organic disorder known as *paralysis agitans* (shaking palsy).

Tremors are found in a great variety of forms and have

been classified in a number of ways. A large number of them are of organic origin. Some of them are functional and others have an emotional basis. It is often very difficult to determine from the form of the tremor what the background may be.

Probably the best way to classify them from our point of view is into two groups: coarse and fine. In the coarse tremor the rate of movement is slow and the extent great in comparison with the fine tremor whose rate is rapid and extent small. Although there are exceptions, as a rule a coarse tremor indicates an organic involvement, while a fine tremor is more likely to indicate either a functional disorder or a toxic (poison) disturbance.

The *intention* tremor is a peculiar type of tremor in which a member shows absolutely no tremor when at rest but when a voluntary movement is attempted there begins a small tremor which increases in amplitude as the movement progresses. While the intention tremor may be increased by an emotional condition in the subject, this tremor is well known to rest definitely on an organic basis.

Spasms involve larger groups of muscles and may be either clonic or tonic. Clonic means that the contractions come and go and come again; they are intermittent, as in a coughing spell when one coughs several times. Tonic means that the contraction is continuous as in the rigidity of some group of muscles. Functional spasms are frequently called *tics* and will be discussed in a later connection. They may also include so-called occupational neuroses, such as telegrapher's cramps, in which there is a tonic spasm of the part of the body used in a person's work leading to a definite cramp that incapacitates the worker. These are usually hysterical reactions and must be so treated.

2. *Choreas and convulsions*. Technically a *convulsion* is a very violent and abnormal muscular contraction. Spasms and tics could be considered convulsions in this sense if they were exaggerated enough. Likewise *choreas* are sorts of convulsions that involve rather extensive muscle groups or parts of the body in irregular, jerky movements. Jerking of the head, repeated hunching of the shoulders, throwing the arms about, and the like might be examples. There are several

choreas with specific names, such as Sydenham's chorea in children, caused largely by rheumatic infection and accompanied by irritability and moodiness. (Rosanoff, 46) A more familiar term for Sydenham's chorea is St. Vitus' Dance.

Popularly, a convulsion is thought of as involving the whole organism in a series of jerky, involuntary movements. This is typical of the *grand mal* variety of the epileptic convulsion. Frequently the clinician also means this kind of convulsion if he does not specify some other. The violence of movement is the important factor in labelling an act convulsive. Actually, there is no distinct dividing line between tremors, spasms, choreas, and convulsions. They are all manifestations of hyperkinetic movement.

A convulsion in a child indicates the need for a physical examination. But a convulsion often has an emotional background which the parent or teacher would do well to recognize. For example, a boy who showed no organic trouble upon careful physical examination one day said to his teacher, "If you make me do that you will make me have a spell." Perceiving that he was using his convulsions to get his own way, she told him to have his spell, that he could do the required task after he recovered. He looked at her in a queer manner, as much as to admit that he was caught, did not have his spell, and did not have another.

232. Hypokinetic motor disorders and incoordinations. Just as *hyper-* suggests an increase, *hypo-* as a prefix means a decrease or less-of the word to which it is prefixed.

1. *Motor paralysis.* Motor paralysis is a loss of ability to use certain muscles and may be either functional or organic. In the organic type there is a direct injury to the motor centers or to the efferent tracts from the motor centers to the muscle. In functional paralysis the motor centers, as well as the efferent fibers, are intact. The disorder is caused by disturbances of cerebral control. It is the functional paralysis that we wish to emphasize but we shall postpone discussion of them until later. At this time we shall give a brief description of the organic paralysis so that we may have a basis for distinction when we come to study the functional type.

The organic paralysis may be divided into three types: the upper motor neuron, the lower motor neuron, and the

peripheral. This classification is based upon the location of the disturbing lesion. The main motor tract (the pyramidal) extends from the cortex to cells in the motor horn of the cord. A lesion of these fibers (called cortico-spinal fibers) gives rise to the upper motor neuron type of paralysis. From the cells in the motor horn of the cord, motor fibers (called spino-muscular) run to the end plates in the muscles. Lesions in this section give rise to lower motor neuron paralyses. Peripheral paralyses are due to disorders in the motor organs themselves. The paralyses from these three causes are quite different in their forms. The main differences between the symptoms of the upper and lower motor neuron types may be summarized as follows: (Hunt, 28, p. 49)

SYMPTOMS OF UPPER MOTOR
NEURON PARALYSES

1. Diffused muscle groups affected, never individual muscles.
2. Rigidity of paralyzed muscles.
3. Deep reflexes present in paralyzed limbs and usually increased.
4. No atrophy.
5. If foot is affected the Babinski reflex is present.

SYMPTOMS OF LOWER MOTOR
NEURON PARALYSES

1. Individual muscles may be affected.
2. Flaccidity and atonicity of paralyzed muscles.
3. Deep reflexes absent or diminished.
4. Atrophy of paralyzed muscles.
5. If foot is affected, plantar reflex normal with full flexion of toes.

In peripheral paralyses, a local peripheral nerve is involved and the result is a characteristic deformity, depending upon the part of the body affected.

From this brief outline it may be seen that paralyses are very diverse in form. So complex are the symptoms that even an expert may be deceived into believing that a functional paralysis is organic. The author sat in a clinic with four psychiatrists and a neurologist who pronounced a patient a case of organic paralysis. He had to be brought to the clinic in a wheel chair. Being impecunious, he was sent to the county poor farm. His residence at this place was by no means a comfortable one. One morning after about a month he was missing and was not heard from afterward. No one helped him to leave and accessory evidence led to the conclusion that he had walked away. Such instances of error in diagnosis are by no means rare.

2. *Ataxias*. The word ataxia is derived from a Greek word meaning disorder. Specifically, it refers to indefinite, irregular, or unsystematic movements that result from some disturbance of the motor centers, the coordinating mechanism of the motor organ itself. "Ataxia is an advanced state of incoordination; incoordination is a mild ataxia." (Hunt, 28, p. 149)

Most ataxias are organic but in some functional disorders the patient may show a lack of coordination which closely resembles the organic type. The presence of ataxia should always be taken as evidence that there is an organic lesion until it can be definitely proved that no such lesion exists. Consequently, the psychologist should be familiar with a few of the simple tests of ataxia.

(a) *Tests for static ataxia*. The most important of the symptoms of static ataxia is known as the "Romberg sign." To elicit this sign, have the patient stand erect, his feet together (both heels and toes touching) and his eyes closed. The normal man should be able to stand without marked swaying. If he sways, the Romberg sign is positive. In serious cases the patient may even fall if not supported. Some patients have learned that they are unable to stand thus and will not close their eyes tightly so the examiner must use care to determine that the patient is not seeing. The presence of this symptom indicates some failure in the coordination of the elements involved in equilibrium.

(b) *Tests for motor ataxia*. These consist of having the patient make a certain movement to determine the accuracy with which it can be executed.

1. *The Finger-to-Finger Test*. Have the patient, with a sweeping motion of his arms, bring together the tips of the index fingers of his hands.

2. *The Finger-to-Nose Test*. Have the patient with a sweeping motion touch the tip of his nose with the index finger of each hand. The test should be made separately with each hand.

3. *The Heel-to-Knee Test*. Supporting him so that he will not lose his balance, have the patient, while standing, touch the knee of one leg with the heel of the other.

These, and similar tests, can be taken both with the eyes

open and with the eyes closed. While the accuracy of these movements will be lessened with the eyes closed, the subject should be able to execute them to a fair degree. The student will need to try these on a number of normal persons to get a basis of comparison with the abnormal.

One of the most characteristic features of some motor ataxias is the clumsy, stumbling sort of gait that resembles that of a drunken man. The legs are spread apart and there is inability to walk a straight line or to control the extension part of the walking process so that the person looks as though he is kicking his leg too far forward as he takes each step. There may be kinesthetic sense involvements or cerebellar lesions in these cases.

LI. FUNCTIONAL MOTOR DISORDERS

We shall now consider those motor disorders which can only be explained when we know something of their history and the personality background in which they flourish. The types that we shall consider are functional reflex disorders, functional paralyses, catalepsy, compulsive acts, and automatic acts.

233. Functional reflex disorders. Some acts that are usually classified as reflex are subject to a certain amount of modification by training and thus come under the partial control of the higher cerebral centers. In so far as reflexes are subject to such control they may be used by patients as defense mechanisms and, under such circumstances, deviations may indicate a functional rather than an organic disturbance.

The sneeze reflex, which is present at birth and usually is little modified in adults, was cleverly used as a defense device by a girl who, in early life, learned its advantages for her. It illustrates what might be accomplished with other reflexes and how difficult it may be to discover the significance of reflex disorders.

A young woman, from the age of five to the age of fourteen years, voluntarily employed the habit of sneezing in order to obtain immediate ends. At nineteen a residual effect of non-voluntary sneezing appeared whenever the subject was angry or fatigued....

The subject is of superior intelligence (I. Q. is 120) ... Her *Thurstone Personality Schedule* is below the median for women and she is now socially well-adapted.

At five years of age, the subject suffered attacks of nasal congestion and

sneezing, and was found by means of positive skin reactions to be hypersensitive to pineapples, strawberries, and grapefruit, indicating food allergy, and to golden rods and asters, indicating pollen allergy. Medical treatment was begun immediately and her sensitiveness to these substances was greatly reduced and so remains. In the early medical examinations she comprehended that certain substances in the environment caused sneezing, and soon thereafter would voluntarily sneeze in order to avoid eating things she did not like, particularly chicken and eggs. Her initial success with the use of voluntary sneezing produced a spread of the habit until it became a dominant means of defense, of obtaining attention and sympathy, and of emotional expression . . . At six, she exploited voluntary sneezing to avoid piano lessons. She also found that she could turn the attention of family and friends from her younger sister to herself by a simulated attack of sneezing. At twelve, she entered high school, and it became necessary for her to study at night. This she avoided by voluntary sneezing. At this age she discovered that non-voluntary sneezing appeared whenever she became angry or very tired. At fourteen, she was sent away to boarding school, at which the teachers systematically ignored her sneezing. The habit no longer possessing an advantage, voluntary sneezing disappeared after a short time. The residual non-voluntary sneezing remains. (Gahagan, 15, pp. 134-135)

234. Functional paralyses. Functional paralyses are modified by artificial means, such as hypnosis, and may appear and disappear without any apparent reason. If, however, we know something of the mental conditions underlying the disorder, we can usually arrive at some explanation of them.

The following instance cited by Janet (30, pp. 28-29)¹ shows how a functional paralysis may disappear in a sleep-walking episode:

A man of thirty-two usually remains in bed, for both his legs are paralyzed . . . In the middle of the night he rises slowly, jumps lightly out of bed,—for the paralysis we have just spoken of has quite vanished,—takes his pillow and hugs it. We know by his countenance and by his words that he mistakes this pillow for his child, and that he believes he is saving his child from the hands of his mother-in-law. Then, bearing that weight, he tries to slip out of the room, opens the door, and runs out through the court-yard; climbing along the gutter, he gets to the housetop, carrying his pillow and running all about the buildings of the hospital with marvellous agility. One must take great care to watch him, and use all sorts of cautions to get him down, for he wakes with a stupefied air, and as soon as he is awake, both his legs are paralyzed again, and he must be carried to his bed. He does not understand what you are speaking about, and cannot comprehend how it happens that people were obliged to go to

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the top of the house in order to look for a poor man who has been paralyzed in his bed for months.

These paralyzes develop from causes totally inadequate to explain them on an organic basis. This is shown by the following case: (Janet, 30, pp. 139-140)

A girl twelve years old had fallen into a passion, and, against her mother's will, had quarrelled and fought with one of her little friends. In the heat of the fight, she had been knocked to the ground, and had fallen rather violently on her posterior. This fall had been complicated by an aggravating circumstance; namely, her frock had been much dirtied in a particularly significant part. The pain was slight and did not prevent the girl from getting up again and returning home; but what is essential is that she experienced a feeling of shame, of fright, and tried to hide her fault. The next day began a complete paralysis of both legs, a serious paraplegy¹ which lasted eight years. Bear this in mind—eight years' paralysis of the lower limbs for having fallen rather violently on her posterior.

In these cases it is quite evident that what is lost is a certain function. This loss depends upon a condition of the mental life of the patient. To treat a functional paralysis necessitates the discovery of the mental background. To center the attention upon the symptom is just what the patient wants and such attention only tends to exaggerate it. Remove the need for a defense mechanism and the paralysis will disappear of itself. We shall discuss functional disorders of this sort again in Chapter XIV when we consider hysteria.

235. Functional tics and choreas.

This name (tic) is generally reserved for rather sudden little movements of short duration, and other terms are used when the same involuntary movements have a greater extent. These little muscular shakes may present themselves in all parts of the body. You may especially notice them in the face; they constitute grimaces of a thousand kinds, affecting the eyes, the nose, the mouth. The patient puckers his forehead in various ways, raises or lowers his eyebrows, winks, looks sideways by starts; he make his nostrils tremble, closes or opens them too much. A very interesting patient... blows violently through his left nostril. Others seem to wipe their noses or to sneeze; their lips suddenly draw to one side or the other, stretch forward or shrink backward, or else are continually bitten—the upper lip as well as the lower one... In tics of the neck (the patient) involuntarily and suddenly inclines his head towards one shoulder, or throws it back, or bends it forward, or turns it on its axis... In tics of the limbs,

¹ Paralysis of the lower half of the body, involving both sides.

the arms, the hands, seem to have taken strange habits; they rise suddenly or move backwards; the shoulders are shaken convulsively; the legs, instead of regularly performing the act of walking, every moment interrupt it by a strange little shake of the knee or foot or toes. (Janet, 30, pp. 120-121)

When the movements are more widespread than the tic they are called *choretic movements*. As we have said, these movements are often based on an organic irritation, but there is no doubt that some of them have quite a different significance. One characteristic of the functional type of choretic movement is that it does not seem so distasteful to the one afflicted with it as would be supposed.

The patients say that they are trying to stop, that they do not like to perform peculiar actions, but at the same time they seem to be perfectly happy about it. For example, one patient in a hospital would lie flat on his back in bed. Suddenly he would give a violent contraction of his back muscles in such a way that he would throw himself a foot or so up from the bed. The body would scarcely have stretched out to normal when another violent jerk would come and throw him up in the air again. These movements would last from several minutes to half an hour, and the patient would be utterly exhausted at the close of such a session. One might think that such a violent series of movements would be extremely unpleasant. On the contrary, this patient, perfectly conscious all through, would look up after a particularly violent jerk and laughingly say, "That was a good one, wasn't it?" The observer would be forced to infer that, while the attacks looked gruesome, the patient was certainly enjoying them. (Morgan, 40, pp. 198-199) ¹

Various explanations have been offered to account for functional tics and choreas. One theory is that they originate in some infection which results in an irritation of the neural centers. After the disease disappears the movement may have been organized into a habit and may persist when there is no immediate cause for it.

Another explanation is that they are symbolic representations of a mental conflict of some sort. This group of theorists would explain many of them as secondary expressions of a sexual stimulation. In support of their view they have especially emphasized thumb sucking and nail biting as examples of response to such impulses.

Anyone working with these symptoms can see quite plainly

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that they are expressions of a basic emotional instability and tension. They are never successfully treated by directing attention to the symptom itself. This may cause a cessation of the particular manifestation but the functional tic is very likely to crop out in another form. On the other hand, if the cause of the emotional instability is removed, if the person attains poise and becomes normally relaxed, the tic or chorea disappears.

236. **Catalepsy.** Catalepsy is a condition of muscular rigidity. The illustration given at the beginning of this chapter represents a functional catalepsy. The way in which this condition appeared and disappeared eliminates the possibility of an organic cause. No organic cause can be conceived that would appear at eight o'clock each Sunday morning and disappear at eight o'clock of the same evening.

It is often very difficult to distinguish catalepsy from an organic contracture. The latter is often a secondary result of paralysis and manifests itself in deformed postures because certain muscles contract and remain rigid. In the case cited above it is easy enough to conclude that the posture is not the result of an organic cause because of the manner in which it comes and goes and because the posture is filled with meaning. A true contracture seldom takes the form of a definite meaningful attitude. To be sure, this latter criterion is not an absolute one because an attitude may be meaningless to one individual but full of meaning to another. Because we can see no meaning in a posture is no reason for assuming that it is organic.

Two general types of catalepsy may be described:

1. *Cerea flexibilitas*. This is the Latin for "waxy flexibility" and is used to designate a particular type of catalepsy. Patients with this symptom are likely to lack any initiative to make movements of their own. They will stand around like pieces of statuary, until someone moves them. They offer little resistance to such externally imposed movement and when so moved will remain where and in whatever posture they are placed. If you move the arm of such a patient, a slight resistance will be offered, but when you remove the force required to move it, the arm will stay just where it was when you released it and will not return to the position

in which it was originally. If you take the hand of the normal person and extend his arm horizontally to one side, the chances are that he will let it drop to his side when you release it. If you do the same thing with a person with the symptom of *cerea flexibilitas*, the arm will stay in the horizontal position. Furthermore, it will stay there indefinitely. The normal person soon becomes fatigued if he holds his arms at a horizontal position for any length of time, but your patient will hold his arms in this tiring position for a much longer time than is possible voluntarily. After a long time the arm may sink lower and lower but shows no trembling or other sign of fatigue or evident exertion.

You may tell a patient of this type that he does not need to obey you, that you are just having fun with him, but he will maintain the posture in which you place him just the same. One patient being placed in an awkward position was asked why he stayed in that position. He replied, "You made me." Told that no one was making him, that it was just a joke, he answered, "Well, then it is a joke." But he maintained the posture just the same even while saying it was a joke.

The distinguishing mark of this type of catalepsy is that it is produced by force external to the patient, who acts like an automaton, a yielding mass that any person can push around and mold in any way that he sees fit. We shall discuss the relation of such symptoms to the whole personality at a later time, but we should see clearly that in such a patient the bodily movements must in some way be disconnected from the ordinary internal motivation that is present in most of us. Such a patient acts like a reflex machine that has no central coordinating control. The normal man does not respond only to a push; he reacts to the total situation at the time. If some one gives you a shove you may move, but at the same time you question why he should shove you. You respond to the social situation as well as to the mechanical one. These patients, on the other hand, seem to regard their bodies as so much extraneous putty for any stranger to maltreat.

2. *Rigid catalepsy*. Rigid catalepsy designates a definite bodily attitude that the patient assumes. The attitude of the

girl on the foot of the bed is an illustration of this. Here the attitude or posture is not the result of irrelevant mechanical forces. It comes from a central stimulus in the patient. Being centrally controlled, a patient with rigid catalepsy will energetically resist external manipulation. He may be influenced by suggestion but not by force except when the force acts as a suggestion through his central neural mechanism.

The postures that these persons may take are quite varied.

The arms, for example, might remain contracted in a menacing or a praying posture. We related the example of a woman who lifted her fist against her husband and who, by a celestial punishment, is keeping her arm contracted in the position of dealing a blow with the fist... A young man, sailor on a merchant-vessel... received upon the chest and abdomen the shock of a barrel rolling on the deck. He was not hurt, but he remained bent forward by a permanent contracture of the muscles of the abdomen and thorax. He kept this singular position for six weeks... Margaret has had for a year her right hand contracted in the position of a hand that holds a needle. Justine had her hands contracted in the position a pianist would give them in trying to stretch an octave. (Janet, 29, p. 331)

That these postures have some central meaning has been shown by the possibility of inducing such cataleptic postures by suggestion, either waking suggestion or under hypnosis. For example, Janet (29, p. 192) suggested to a patient while she was under hypnosis that, on awaking, she would take a flower from a bouquet. True to the suggestion, she reached out as though to take a flower, but as she did so her hand assumed the rigid posture of one taking a flower; thumb and index finger brought together as though holding a rose, and the other fingers slightly curved, but all very rigid. With hypnosis it is possible to suggest various poses which the subjects will maintain for long periods of time with very little evidence of fatigue.

237. **The meaning of postural expressions.** The meaning of these postural expressions is not always apparent in the postures themselves. Because one has an attitude of devotion does not indicate necessarily that the significant thing in the mind of that individual is his devotion. Even excessive devotion would not make us take a rigid posture to indicate that we are devout. The meaning must be sought elsewhere.

The attitudinizing of the rigid cataleptic has been found

in many cases to express one side of an intense mental conflict. Suppose a patient has been strongly tempted to do or think something that is contrary to his moral ideas. In mustering his forces to defend himself, he may decide, "I must be more pious, more religious, and then I surely cannot fail in this struggle." Still the temptation persists so that he must keep more predominantly before him the opposite force typified by, "I must be religious, I must be religious." It is only one step from this to a tendency to repeat the affirmation, "I am religious, I am religious." In such a conflict what more natural than to assume a posture to help out the religious forces? The religious posture may then be seen to be an expression of the urge to be more and more as the posture would indicate. The real meaning of the posture is not what it typifies but is rather the mental conflict which gave rise to the necessity of maintaining the posture in self-defense.

When we understand such a mechanism we see how to study such a postural activity intelligently. The question we ask ourselves is, "What is the nature of the mental struggle that would lead to the adoption of such a posture?" If we can answer this question for the specific case under examination we have the secret meaning of the catalepsy.

Evidence points to the fact that the beginnings of catalepsy may be found early in life. It is because these are not understood and are permitted to develop that we have the advanced types that have been described. If incipient cases were properly handled, there is little doubt that many more serious cases could be averted. For example, a mother brought to a nursery school a girl of four who had periods of very unusual behavior. At such times she performed queer movements, took absent-minded postures, permitted her hands to be placed in queer positions and would make no response to anything that was said to her. Her mother thought that she must be on the road to insanity and was much perturbed about the situation. In two months' time, under proper treatment by those in charge of the nursery school, who understood that such things had meaning, these symptoms completely disappeared. Certainly, everyone dealing with young children should clearly understand that postures are likely to be expressions of personality trends and

cannot judiciously be ignored if the child is to be brought successfully to maturity.

LII. DISORDERS OF EXPRESSION

Speech and writing are by far the most important forms of motor expression that man possesses. Because of their complexity, they are subject to peculiar disorders, many of which can be avoided by judicious training.

238. **Mutism.** Speech is one of the most used and most characteristic forms of expression that the human being possesses. Through speech we not only express ourselves to others but cover our secrets and deceive others as well.

A person may have no use of speech apparatus, i.e., be mute, because of sense deprivation. The deaf-mute cannot talk because, not hearing sounds, he has no way of evaluating them. We have already seen that sensory intake is necessary for motor control of any sort, hence, if a person lacks from birth the ability to hear sounds, it is hard for him to control his own production of sounds. Mutism may also be based on mental deficiency or brain injury.

There are forms of mutism that are not dependent upon deafness or any organic disturbance of the central mechanism or of the speech organs. In adults, mutism may be a symptom of serious disease or it may indicate hysteria.

The same factors that helped us to distinguish functional disorders of other forms are also useful in diagnosing functional mutism. Functional mutism can be distinguished from its history, from the fact that it is inconsistent, and that it is usually overdone.

Mutism of this sort is often brought on by an emotional trauma.

A man of about forty, living in a little town, had saved some money; his wife persuaded him to come and spend it in Paris. He settled with her in an hotel in the metropolis. One day, after a short absence, he came back to the hotel and found that his wife had disappeared, taking the little hoard with her. The poor man was so upset that he was deprived of utterance, and remained speechless for eighteen months. Now, though seemingly cured, he is still liable to the same accident; at the least emotion or fatigue, he loses again the use of speech for a fortnight or for two months. (Janet, 30, p. 211) ¹

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Mutism is often adopted by children as a means of bringing adults to terms. It is a very effective weapon because of the intense interest that adults usually have in the proper development of the child's speech. Rather than do anything to disturb the child's speech, the adult surrenders to whatever whim the child desires, little realizing that such procedure merely tempts the child to continue the ruse.

239. **Stuttering.** Incomplete though they are, surveys of the incidence of speech defects indicate that about 1 to 1½ per cent of the total population stutters. Boys outnumber girls by at least two to one and probably much more in stuttering. One of the most common types of motor disorder that we find, it is probably one of the least understood. A vast literature has grown on the subject, and we can only touch a few of the high spots here. Probably the greatest deterrent to a true understanding of the stutterer lies in the fact that we have been prone to devote our attention to the stuttering and not to the possible causes of the stuttering. Stuttering is a symptom and, as we have repeatedly said, it is more important to find and treat the cause of a symptom than it is to treat the symptom even if the latter must also be treated.

1. *Symptoms and accompaniments of stuttering.* We shall treat stuttering and stammering as the same disorder although some have differentiated the two, with stuttering as the repetition of sounds and stammering as the blocking of speech or the inability to produce sounds. Dorcus and Shaffer (11) distinguish the two in terms of clonic spasms of the speech musculature for stuttering and tonic spasms for stammering. They, too, treat them together, however, since their etiology and treatment seem to be similar.

Some speech disorders are due to abnormalities in the peripheral organs of speech, such as cleft palate, malformed arch, poor occlusion, and the like; some of these result in stuttering. Such defects are not difficult to discover and the training of individuals who possess them must be directed toward teaching the patient to speak in such a manner as to minimize the effects of his defective vocal apparatus. Careful surveys of those with speech disorders indicate that not more than 10 or 15 per cent are caused by abnormalities in

the peripheral organs of speech. The remaining 85 to 90 per cent have normal speech organs but are unable to use them properly. The majority of these are stutterers.

There is greater difficulty in tracking down the imperfections in the use of the speech apparatus than in finding the abnormalities of peripheral organs. When they are found, one is not always sure whether they are causes or symptoms. There is probably a tendency at present to regard them as largely symptomatic; but these symptoms are frequently treated since the cause is unknown, and symptom treatment may at least give temporary relief. Breathing is one of the aspects of speech that has often been singled out as functioning poorly in stutterers. Frequently, one finds that a stutterer in attempting to talk tries to inhale by using his abdomen and to exhale by using his thorax. The result is a sort of neutralizing which keeps any air from passing over the larynx (voice box). Sometimes the larynx tends to move with the breathing procedure instead of operating independently, producing a spasm of the larynx. (Landis and Bolles, 37) Such poor synchronizing of the muscles involved in speech is familiar to all who have watched a stutterer throw a tremendous amount of energy into the attempt to do what most do with a minimum of effort. Pneumograph and psychogalvanometer studies corroborate the inferences made about the tension produced in the musculature without appreciable results in the form of smooth speech. A good description of the inconstancy of speech, breathing spasms, tremors, tonal rigidity, fluctuation of breath pressure, bizarre voice wave forms, abruptness of initiation of tones, repetitions of sounds, speech blocks, and the disintegration in the movements of the speech mechanism as a whole can be found in Travis (53).

Hill (25, 26) has reviewed the physiological and biochemical literature on stuttering and comes to the conclusion that the stutterer is not different in either of these respects from the non-stutterer. This was most clearly shown in the biochemical studies. There are some common physiological characteristics of adult stutterers, such as sharp inspiratory gasp, eye blink, tonic and clonic contractions of the speech musculature, and atemporal synchrony of the breathing ap-

paratus. When these changes are compared with the reactions of normal speakers during startle, the similarity is too great to be brushed aside as due to chance. Hill believes that stuttering is a sort of startle reaction physiologically which occurs when the individual is thrown out of contact with the situation at hand, when he cannot adjust immediately to urgent circumstances. The work of Meyer (39) has tended to corroborate the lack of constitutional differences between stutterers and non-stutterers. Therapy aimed at the correction of speech movements is usually indicated and may be the only treatment possible in adult stutterers, but with younger patients it may not touch the underlying cause of the maladjustment of which the stuttering is a symptom and thereby be quite insufficient.

The work of Johnson (32) and his coworkers has shed a great deal of light on psychological symptoms and accompaniments of stuttering. A mental hygiene inventory which he used showed the stutterers to be more like a normal group of people than like psychoneurotics. They did, however, feel that their speech defect was a disability or an inferiority and resented attempts to force them to recite or speak in public. Such enforcements were likely to produce increased tension, mild anxiety, and finally greater maladjustment. We have known for some time that certain consonants, such as *b*, *d*, *t*, were likely to give more trouble to stutterers than other sounds. Johnson's work has made it clear that the meanings of words, or their content, have a very great influence on how much stuttering is done. By a series of ingenious experiments, he and his colleagues have shown that stutterers consistently stutter on the same words and that if certain words are removed from material which they read aloud the incidence of stuttering is significantly decreased although not entirely eliminated. He is inclined to feel that these semantic factors are of greater importance in the etiology and maintenance of stuttering than any others.

2. *Physiological and constitutional theories.* The varied factors, both physiological and psychological, involved in stuttering have given much leeway for theories to be developed as to its origin. We have no intention of giving a sys-

tematic review of them. Hahn (22) has recently done an admirable job of that, and we shall mention only a few representative ideas about the etiology of stuttering.

In discussing physiological and constitutional theories it should be clearly understood that few if any theorists deny the importance of psychological factors. Fears, emotional trauma, maladjustment, etc., are readily acknowledged as being significant in the background of a stutterer. Some theorists feel, however, that these are more precipitating causes than predisposing ones; i.e., they may set the stutterer off on his speech defect, but there were other factors, physiological or constitutional, which made him susceptible to stuttering itself.

Travis (53) has elaborated one of the most widely-known of the theories of stuttering. Essentially, he feels that the primary cause of stuttering is in the conflict between the right and left cerebral hemispheres of the brain for the control of a mechanism (the peripheral speech mechanism) equally accessible to both hemispheres. One of the cerebral hemispheres is normally dominant over the other; this is revealed in our preferring to use one hand instead of the other. There may develop, however, a conflict over the speech mechanism since it is in the middle of the body and not so easily identified with one brain hemisphere as a hand or a foot which is definitely on one side or the other. The result may be a lack of unity in direction given to the movements of the speech muscles so that an undesirable independence of action of the two lateral halves of the speech musculature results. This non-dominance could presumably arise from lack of an hereditary bias in favor of the dominance of one hemisphere, some unfavorable environmental influences which were in opposition to such dominance (such as changing the person from left to right handedness), or brain injury or diseases which interfered with the dominance. Greene (18) also holds to a constitutional basis for stuttering although he does not speak of the cerebral dominance influence. He speaks of a constitutional stutter type based on hereditary predispositions and says, "Individuals in the Stutter Type demonstrate a basic tendency toward excitability and disorganization, an exaggerated capacity for response to stimuli, and a relatively

high potentiality for the spread of emotional tension. Their mental and physical activities are continually being disturbed or inhibited because of uncontrolled reactions. This disturbance is manifested (in psycho-motor performance) by arrhythmia or hesitancy, which is in fact a form of stuttering." (p. 301)

3. *Psychological theories.* The presence of constitutional defects should not make us lose sight of such precipitating factors as prolonged excitement, exhaustion, emotional shocks, fear, excessive timidity, hypersensitivity, feelings of inferiority, self-consciousness, and anxiety. Fear, embarrassment, or feelings of inferiority will interfere with any form of motor coordination, as is evidenced by the fact that a person who is habitually ill at ease will upset articles of furniture, spill his food, and trip over rugs. It is the voice, however, which betrays most quickly any emotional stress and it is a well-poised individual who can experience a violent emotion but retain a complete control of his vocal mechanisms. To be sure, there are persons who are clumsy, who have not learned to handle their muscles with skill and grace; but, if a person is ordinarily able to manifest motor poise and then, because of emotional stress, does some awkward act, we all understand that he needs to develop self-assurance and his motor coordination will return. Many stutterers have been benefited by no other treatment than training in self-confidence.

Why, then, does stuttering become a habit? Largely because the stutterer develops the habitual attitude of fear, embarrassment, and lack of confidence in his speech or in himself. (Fletcher, 14) Let a golfer fear that he will drive his ball into the water hazard, and he can easily develop the habit of fear each time he approaches the hazard and will invariably drive his ball into the water. He overcomes this difficulty by two methods: eliminating his fear and improving his golf; but the golf practice must take place under circumstances in which fear is not present. Laugh at him, admonish him, sympathize with him, or make him conscious of his tendency in any manner when he approaches the hazard, and his trouble will be increased. When his fear departs, his tendency to drive into the hazard will go with it.

This analogy clearly shows why the typical treatment of the stutterer aggravates his difficulty. He is the butt of all sorts of jokes, he feels that he is different from others, and as soon as he attempts to speak, he becomes frightened. He is told by charlatans who wish to sell him some worthless remedy, or by those who wish to sell him a useless training course, that if he does not remedy his defect he will be a failure in life. All these experiences conspire to make him shun people and make him more and more self-conscious about his speech.

Johnson has expressed some of these same ideas and others too in his semantic approach to stuttering. He approaches the problem developmentally. All children repeat syllables as they are learning to talk and even after they have achieved a certain verbal fluency. These repetitions and stutterings are usually taken for granted, but they may be reacted to by the adults around them in a questioning and anxious fashion. Next time, the adults react to this reaction (attitude) which they have previously made as well as to the child's halting speech. This reacting to a previous reaction as well as the behavior situation can pile up until it becomes self-reflexive. Whether the adult's attitude is that the child is actually stuttering or merely one of vague uneasiness about his speech, the child is able to perceive it as he speaks, and his uneasiness is enhanced. By another self-reflexive process he then learns to stutter; i.e., he reacts not only to the social aspects of the speaking situation (as is true in Fletcher's theory) but to his own previous reactions in such a situation. He is thus caught in a semantic environment of evaluations, attitudes, policies, standards, verbalizations, all of which encourage his stuttering.

Some psychological theorists, particularly some psychoanalysts, would have stuttering basically a psychoneurosis to be treated by psychoanalysis. This point of view does not seem to be widely held; we feel that stuttering may accompany a psychoneurosis but that stuttering itself is not in that category.

4. *Treatment of stuttering.* It seems logical that different theories of stuttering would produce different therapies. To a certain extent this is true, but there is also a great deal of

common treatment found. Distraction devices are often used particularly for symptomatic relief. Speech correctionists say that a certain amount of their work owes its value to distracting the stutterer from the fears and self-consciousness he feels when he speaks. If the cause of the stuttering is not too severe, distraction may provide the person just enough of a springboard to give him the confidence upon which to build further assurance in social communication. There can be little doubt that faulty habits of speech, where they exist as such, should be corrected. The real remedy, however, is not to train the individual to correct his speech mechanism as such, but to re-educate his personality. Any procedure that will increase his self-confidence will improve his condition, whereas any method that reduces his self-confidence will prove useless. Emotional re-education, rather than motor drill, is the essential factor in treatment. This may call for a change in the environment of the stutterer especially with children, or it may require more intensive work with the stutterer himself.

240. Organic speech defects. One should be careful not to confuse defects due to organic deterioration of some part of the neural mechanism with stuttering. Organic defects can usually be distinguished from functional stuttering rather easily. Everyone knows that at times a stutterer can talk very fluently and easily. The very sounds that make him pause at one moment will be glibly enunciated an instant later. Organic speech defects are free from this distinguishing mark. In the latter, some of the muscles of the lips, tongue, or pharynx may be paralyzed or the coordination of the different parts may be faulty.

As an example of organic faulty speech the so-called paretic speech is very striking. Paresis is a destructive disease which involves rather widespread areas of the cortex and often some lower centers. The following characteristics have been observed in paretic speech. It may be thick, indistinct, and tremulous, or it may be a slow drawl with deliberate enunciation of each syllable. This latter characteristic has been called "scanning speech"; the patient talks as though he were scanning poetry. Another characteristic has to do with the sequence of syllables. The patient may omit, reduplicate, or

interchange syllables. All these symptoms are the result of a lack of coordination of the various elements involved in the speech process.

These characteristics are usually demonstrated by giving the patient certain test phrases to repeat, such as: "Methodist Episcopal," "third riding artillery brigade," "medical electricity," etc. For "medical electricity" the patient may say "medcal elixity," "medcalixity," "medcal extricicity," or some other queer combination. He may say "Methdist pispacol," etc. Often when he attempts to repeat the phrase it comes out with explosive force. Such speech is obviously quite different from the characteristic functional stutter we have just described.

241. Writing disorders. Next to speech the most used method of motor expression is writing. Theoretically, one should be able to tell a great deal about the personality of the writer from the way in which he expresses himself, from the form of the writing, and other related characteristics. However, little valuable scientific research has been done in this field. Some have made wild claims of ability to analyze character by means of handwriting, but they have not, under adequate control, demonstrated anything more than the ability to make broad generalizations which have little practical value. Only when the content of the writing is considered or when extremes of one sort or another appear in the form of the writing can it be of value to the student of human nature. We should add that evidence derived from a study of writing should not be taken at face value or considered as sufficient evidence for a complete personality analysis. Only when such evidence is supplemented by other evidence does it become valuable.

1. *Motor incoordination in writing.* Most writing incoordination is due to some organic defect. One of the most striking is the paretic writing which has some of the characteristics of the paretic speech just described. Such writing is shown in Figure 12. An outstanding feature of this writing is the tendency to omit or to duplicate portions of the writing. This is seen in the omissions in the word *April* and in the tendency to make too many loops in writing such a letter as *n*. A handwriting tremor is shown in Figure 12A.

A

Manhattan State
Hospital Monday

October 15 1932

This is a beautiful
-w day

B

Manhattan State Hospital
This is a beautiful day now April
- Around the ragged rock the ragged within name

Benjamin Bicker
April 7 1908
1919

FIG. 12. PARETIC SCRIPT

Illustration A shows a marked disturbance of coordination. There are noticeable interruptions, especially pronounced in *beautiful*, which is hardly legible. In B one may observe numerous reduplications of strokes and letters. (From Eugen Bleuler, *Textbook of Psychiatry*, The Macmillan Company, by permission.)

2. *Peculiarities in writing output.* If the mental processes are shattered, as in some types of mental disease, this condition may show itself in the things that the patient writes. Figure 13 illustrates the production of a patient who has a marked disintegration of personality. The writing is incomprehensible. New words are coined (neologisms); there is

3. *Writer's cramp*. An interesting phenomenon is what has been called writer's cramp. When a person has written for a long time the muscles of his hand and arm may refuse to operate and the writer is forced to desist. This looks like a sort of organic paralysis caused by fatigue, but in many cases such a writer's cramp is of central origin. In such cases it has been found that the writer is running out of ideas. His writing paralysis then becomes a defense against admitting that he can no longer make his brain function. His hand refuses to work until his ideas become clear and then the writing cramp ceases.

4. *Agraphia*. We have mentioned agraphia, or the inability to write when it would be presumed the person could do so, in connection with aphasia. Very likely, cases of agraphia are functional defenses similar to the one described by Glaser. (16) An eight-year-old boy developed agraphia, which he maintained for a period of ten years. His parents were well educated and placed a great deal of emphasis on a good education. There were two older children, both of whom were much better in their studies than the patient who was teased and chided for his lack of mental ability to equal his siblings. He had to be kept back in the second grade when he developed the agraphia although he could use his hands and arms normally otherwise. His agraphia was a protest against school and doing what was school's chief task—writing. He could not be blamed so much for his poor showing if he could not write.

5. *Mirror writing*. In mirror writing, all the letters and words are reversed, and like ordinary writing seen in a mirror. This phenomenon is not very common, but the few cases that have been found have created a great amount of interest and speculation. Some children show a tendency toward this type of writing, a tendency that is very easily corrected. In others the difficulty seems to persist. There are individuals who can write either forward or in true mirror style, and still others who write normal script with one hand and mirror writing with the other.

Muhl (41) reports the case of a woman during automatic writing "writing forward normally on one line, dipping down at the right margin and writing mirrorwise on the next

line, again dipping down at the left margin and writing forward, *etc.*, without ever taking her pencil from the page." This woman "used mirror imagery as a child in play activities...and probably this practice of recklessly juggling spatial perception which gave her the ability to reverse images...plus the convenience of not taking her pencil from the paper, caused her to adopt the particular mode of writing in which she indulged."

Our knowledge of space relations is built up by experience, as has been demonstrated. Hence it is only because of our training that we write forward. If a child has by some chance learned the reverse relationships, this phenomenon is not so strange. The puzzling part is that in some individuals the tendency should persist into adulthood. This persistence may be based on training which has occurred without the knowledge of teachers. When the senior author was in elementary school it was quite the fad to produce mirror-written notes so that those who did not know the method would not be able to read them. At first mirrors were used in the writing, but most of the boys soon learned to write mirror script without the aid of a mirror.

Inability to change from such a habit as mirror writing indicates a lack of plasticity, an inability to drop one habit system for another more useful one.

LIII. MOTOR FUNCTIONS AS EXPRESSIONS OF PERSONALITY

In our survey of motor disturbances we have seen another phase of personality. Our motor responses are, in the last analysis, a means of expression; they indicate the way in which we have received impressions through our sensory apparatus and how these impressions have been coordinated. Some of the problems that these motor disorders present cannot be entirely analyzed until we study the integration of the personality as a whole.

One thing we should like to emphasize before leaving this subject. We judge others by their motor expressions—their actions, their speech, their writing, and their bodily postures. But we can understand the significance of these motor expressions only when we have answered the question,

"Why does a person behave thus?" Social adjustment involves the inhibition of certain tendencies, the disguising of impulses under expressions designed to mislead the observer. While this is taken for granted in normal life, it is vastly more significant for the study of abnormal manifestations. The intelligent student of human behavior is the one who learns to see the real significance of various motor expressions.

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CHAPTER XI

EMOTIONAL DISORDERS

A description of the way in which emotional patterns develop will supply a foundation upon which we may build our study of abnormalities in the emotional life. An abridged survey of the physiology of emotion will help us understand that emotions are reactions of the whole person and lead us to a discussion of psychosomatics. We shall then study the emotional extremes that we find in each of three groups: namely, joy and sorrow, anger and fear, and love and hate, reserving love and sex perversions for a later chapter.

242. Illustration of an abnormal fear.

The patient was a young man, suffering from a mild neurosis. . . . Whenever he stood at the brink of a height he became afflicted with slight manifestations of morbid anxiety (dread, nervousness, giddiness, palpitation, tachycardia,¹ sweating, etc.). He experienced a definite fear of falling, or, to be more precise, a fear lest he might jump over, and would hastily draw back to a safer position or clutch on to any fixed object. . . . The symptom was always more severe when the edge overlooked deep water, such as from a quay or high deck aboard ship. The vicinity of any other man when he was near a dangerous edge made him afraid that the latter would throw him over; although he realized, of course, the unreasonableness of this fear, it caused such discomfort that it cost him a very considerable effort to walk or stand with another man in a position of this sort. The latter fear applied only to other men, not to women.

Investigation of the patient's history brought to light the following relevant facts: He had had the phobia as long as he could remember, though it varied considerably in intensity from time to time. He recalled, with no special difficulty and merely by carefully searching his memory, a series of occurrences that deserve the name of psychical trauma,² and which seemed to have a direct bearing on the present symptoms inasmuch as they concerned situations that closely resembled those under which the symptom was manifested. Two of these were much more serious than the others, and were also the earliest in time. The memories³ will be narrated in order, the first being of the most recent occurrence.

This referred to an incident that occurred when the patient was ten years old. He was taken to a village concert by a grown-up friend, who, because the hall was crowded, made him sit on a window ledge some six

¹ *Tachycardia*, excessively rapid heart beat.

² Psychical traumata are mental injuries of a violent type.

³ These memories throw light on the development of the fear.

feet above the stairs. He feared he might fall off, and, after he had endured the situation for about a half hour his fear became stronger than his embarrassment, and he asked his friend to lift him down. Clearly, however, the incident contained not so much a serious trauma in itself, as an occasion that was well adapted to bring the phobia into prominent evidence.

The year previous to this, his father had taken him up in a tower about 200 feet high. When he reached the circular projecting balcony at the top, which though protected by a railing was quite open, his father laughed at his fears, and forced him to walk around the tower on the balcony. Completely terrified, he accomplished this, but the memory was still disagreeable.

The third incident was one which had occurred when he was seven years old. At the end of the school playground was a wall, fifteen or twenty feet high, that divided it from lower ground on the side of the hill. One day a school-teacher (a young man) lifted him over this wall as a practical joke, and suspended him upside down by his ankles, playfully threatening all the while to let him drop. As may be imagined, this had caused in the boy a fit of abject terror, though it is worthy of note that it disappeared soon enough after he was safely back in the playground.

The last of the series, and the only one that showed any dimness in the memory of it, dated back to the age of three.¹ The patient seems to have been a fretful child, much given to crying, and on one occasion, when he had probably been more than usually troublesome, a visitor who was staying in the house, and whom the child had good reason to dread, picked him up in anger, carried him outside, and held him over a high cask of water, into which he threatened to drop him unless he became quiet. (Jones, 22, pp. 508-510)

Such illustrations as this show how an apparently irrational fear may be traced to a series of experiences, traumatic or not, which provide an understandable explanation of the phobia.

LIV. EMOTIONS ARE RESPONSE PATTERNS

Emotional behavior may be considered as the pattern of response that an individual makes when confronted with a situation that demands a response different from any to which he is accustomed or for which he is or feels inadequately prepared. Such behavior can be understood only when we take into consideration the stimulating situation, the various aspects of the reactions made, and the subjective experience of the individual. Emotional behavior patterns that are established to meet one emergency may be used for quite different purposes at a later time.

243. Distinction between emotional and non-emotional behavior. If the amount of light entering my eyes is some-

¹ All the dates could be definitely determined by extrinsic references, which need not be here detailed.

what increased, the pupils will contract and, if the light has no significance for me other than intensity, this will be an adequate reaction and no further readjustment may be necessary. Such a simple bit of adaptive behavior carries with it no emotional significance because the ready response (contraction of the pupils) is a good and sufficient one. Thus we may generalize and say that emotions are absent when we make an *immediate* and *adequate* reaction to a situation.

Should the light be so intense that it causes pain even when the pupils were contracted, or should it convey some meaning to me (such as, "You will die in ten minutes") for which I have no ready response, I may exhibit a great variety of violent reactions. These may include my report that I am excited, behavior that leads an observer to say that I am excited, and changes in heartbeat, respiration, tonus, and other bodily conditions that a physiologist could measure with suitable devices.

Emotional behavior, then, occurs when a person encounters a situation for which he has no ready, adequate response and manifests itself in an agitated condition of the organism and in a variety of activities of unusual vigor.

Emotions cannot be defined in terms of the stimulus alone because a certain situation may, at one time, produce violent reactions and, at another time, result in a simple and ready response with complete absence of emotion. Nor can emotions be defined in terms of response alone, for we may make the same reactions in times of either emotion or calmness. Nor is the subjective report alone a true indicator of emotional experience, for it is possible to get various reports which belie the conduct of the person making the report.

All aspects of the emotional pattern should be considered in any true description of emotional life and our judgment as to whether certain behavior is emotional or non-emotional must be drawn from a consideration of the total activity pattern, including the situation in which the behavior occurs, the subjective experience, and the reactions.

244. Varying aspects of emotions. Probably all emotional activity has its origin in maladjustment of one sort or another. In most cases of maladjustment there are changes in visceral tension and glandular activity which incite the sub-

ject to greater skeletal activity and possibly to a satisfactory adjustment to his dilemma. In subsequent experiences there may be changes in the original pattern of response. The overt behavior may be withheld without a diminution (there may even be an increase) of the visceral tensions, or the skeletal behavior may remain without much visceral tension. In addition, the subjective experience may change with repeated experiences. Situations that were originally enjoyed may become distasteful, those that were painful may become pleasant, or the subjective experience may become relatively insignificant, with no cessation of overt emotional behavior.

Initial emotional experiences usually manifest a disorganization of habitual responses. Later experiences may manifest increasing efficiency in meeting situations that were, at first, completely disrupting. In other words, we become less emotional as we increase the efficiency of our behavior; there is an inverse relation between degree of emotionality and effectiveness of conduct.

Emotional behavior may persist long after the original adaptive necessity has disappeared. The fear of a dog, for example, should drive us to varied behavior until we find a satisfactory way of adjusting to the dog, but we may persist in our fear behavior whenever we see a dog instead of having learned a better way of acting. Again, we may cultivate emotional tensions because we gain some pleasure from them. Finally, we may manifest emotional behavior because of the influence that this conduct will exert on other persons. The child may originally have a temper tantrum in an effort to remove physical restraint but, at a later time, may use his tantrums to bring his mother to terms.

If we agree that emotional behavior is merely one aspect of behavior, we will understand that emotions are not concrete entities but, instead, intellectual abstractions drawn from certain aspects of life. They are behavior patterns, developed through experience, and subject to modification by future experiences. Pathological emotions may indicate failure to progress beyond childish levels, a return to immature patterns, or distorted learning.

LV. PHYSIOLOGY OF EMOTION

There have been many explorations to find the "center" of the emotions. No such center has been found or is likely to be found since emotion is only one aspect of ongoing behavior. At one time the portion of the midbrain called the thalamus was thought to be the center of emotions, and later the nearby hypothalamus was considered so. We now know that these play important parts in mediating emotional behavior, but so do other parts of the nervous system.

245. Cerebral cortex. This is the highest segment of the nervous system, the part that is involved in our voluntary actions. Its role in emotion has been considered, until recently, largely a control or inhibitory one. Through experiments in prefrontal lobotomy we have come to see that there is direct cortical influence on emotional behavior. This operation severs the connections between the prefrontal lobes of the cerebral cortex and the thalamus in the midbrain. Such treatment results in profound emotional changes, anxious patients becoming calm and depressed patients talkative, euphoric, and irritable. There is also evidence (Kluver and Bucy, 23) that surgical interruption of certain parts of the temporal lobes of the cortex, which are adjacent to the frontals, causes emotional changes. Such changes could occur only if the cerebral cortex has an important function in our emotional life.

246. The thalamus and hypothalamus. Some of the most significant work on emotion was done by Walter B. Cannon (7) and his associates. They found that stimulation of a portion of the midbrain, including the thalamus and hypothalamus, would produce a "sham rage" in decorticated animals. This and other findings led many to suggest that these brain centers made up the seat of the emotions. But the sham rage was truly a sham; no emotional feeling seemed to go with it. It was shallow, short-lived, and without direction, so that in the true sense it represented only the motor expression of rage. (Masserman, 30; Wortis and Maurer, 40) We have already indicated that this is only a part of emotion. It is in the hypothalamus that the motor centers for emotions seem to be found. The important thing for us to see, however, does not concern the existence or non-existence of one single center, or seat, of emotion so much as the fact that in

the nervous system there are special motor areas in the hypothalamus involved in emotional expression, distinct from those involved in voluntary facial expression. (Hathaway, 18, p. 230) We have seen that something of the same situation holds true in the cerebral cortex, and now we shall find it also occurring in the peripheral nervous system in connection with the autonomic segment. There is no one emotional center; rather, at each level of nervous development, there are parts of the nervous system which play a special role in emotion. For emotional life, as normally experienced, to occur all must operate, including the cerebral cortex.

247. The autonomic nervous system. The word autonomic means independent. Actually, the autonomic nervous system is far from independent, but the results of its action are often independent of our consciousness, since its chief function is to regulate our "internal economy" or those biologic processes that keep the body living, such as digestion, respiration, glandular balance, and circulation. These things go on without our conscious knowledge of them or without our having to *will* that they be done or provide special stimulation for their occurrence. It is precisely these bodily processes that show changes during emotional behavior, the function of which, according to Cannon, was to prepare the organism for emergency behavior.

1. *The pattern of the autonomic reflex.* You might expect a difference to exist between the way a nervous impulse travels from a sense organ through the central nervous system to a muscle of the skeletal system and the way in which an impulse travels to one of the smooth muscles of our internal organs. Your expectation would be correct. Let us take the familiar knee jerk as an example of a skeletal reflex. When the sense organs in the patellar tendon receive the stimulus (a blow), the impulse goes to the spinal cord and over an *association* nerve fiber directly to a motor neuron, which carries it out to the quadriceps muscle of the thigh for action. In an autonomic reflex the impulse goes to the spinal cord and to an association fiber but not directly to the motor neuron. Rather the association fiber goes to a ganglion (group of nerve cells) of the autonomic nervous system, which is just *outside* the spinal cord. This ganglion, instead

of influencing just one muscle, such as the quadriceps, may send impulses to many muscles of internal organs, such as heart, stomach, liver, and also to glands, such as the adrenals. The difference between the skeletal reflex and the autonomic reflex may be regarded as the substitution of the autonomic ganglion connection for the association connection. This difference is shown in the diagram in Figure 14.

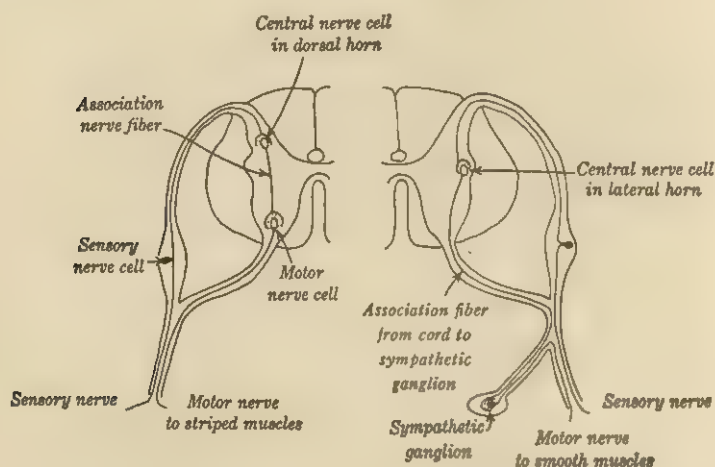


FIG. 14. SCHEMATIC ILLUSTRATION OF THE ORDINARY SKELETAL REFLEX (LEFT) AND THE AUTONOMIC REFLEX (RIGHT)

In the ordinary reflex the impulse comes through the sensory fiber to the center in the dorsal (rear) part of the cord, is transmitted by means of an association fiber to a motor cell and is carried out along the motor nerve to some muscle. In the autonomic reflex, a sensory impulse comes in through the dorsal (rear) horn to the lateral horn of the gray matter of the cord. An association fiber carries the impulse from here to the sympathetic ganglion where it makes connection with motor nerves which go to the smooth muscles of the body.

Another difference between the two reflexes lies in the fact that in the skeletal reflex the impulses go from the neural centers only to striped muscles, while in the autonomic reflex the efferent impulses go from the autonomic ganglia only to smooth muscles. Finally, when a striped muscle, that is, a skeletal muscle, is stimulated, sensory receptors in the muscle carry other impulses back to the nerve centers in the cord. In the autonomic system most of the impulses are efferent, that is, they go *from* the center out to the smooth muscles. Afferent stimuli from the smooth muscles are rela-

tively few and are perceived only as vague pains, aches, or tensions, or not at all.

2. *The organization of the autonomic nervous system.* In studying the operation of the autonomic nervous system we must remember that one of its reflexes is just as much of an abstraction as is an ordinary reflex, devised to enable us to understand the principles upon which the whole mechanism operates. In actual life a large number of such units operate together in a pattern combination. The nature of the autonomic patterns is quite different from that of the patterns in the central nervous system. Their general organization can be understood by a study of the whole autonomic structure. This is schematically illustrated in Figure 15.

The centers of the autonomic nervous system are located in ganglia that are wholly outside the spinal cord. In the trunk region these lie along each side of the spinal cord. In the head and pelvic region the ganglia are located near the organs they control, sometimes wholly within the organ they innervate. This latter is the case in the stomach and heart. The connections through these ganglia are so arranged that a number of organs widely distributed throughout the body are innervated by fibers originating in the same ganglion. The function of this arrangement is apparent. These diverse organs may be controlled from one center and hence made to operate harmoniously. Such unified control would not be so easily accomplished were a number of interposing mechanisms inserted and a separate control maintained for each organ.

There is a close connection by means of association fibers between the autonomic and the central nervous systems. The two systems are functionally related. A proper conception of the functions of the autonomic system depends upon keeping the fact of the interdependence of the autonomic and the central nervous systems in mind.

3. *Segmental division of the autonomic system.* We can conveniently divide the autonomic nervous system into three sections. These divisions are outlined as follows: Where the nerves pass out from the spinal cord to the arms and legs, there is an interruption of the autonomic ganglia, thus pro-

viding a natural break in the organization of the autonomic system. The part above the arms is called the cranial segment, the central portion is called the sympathetic or tho-

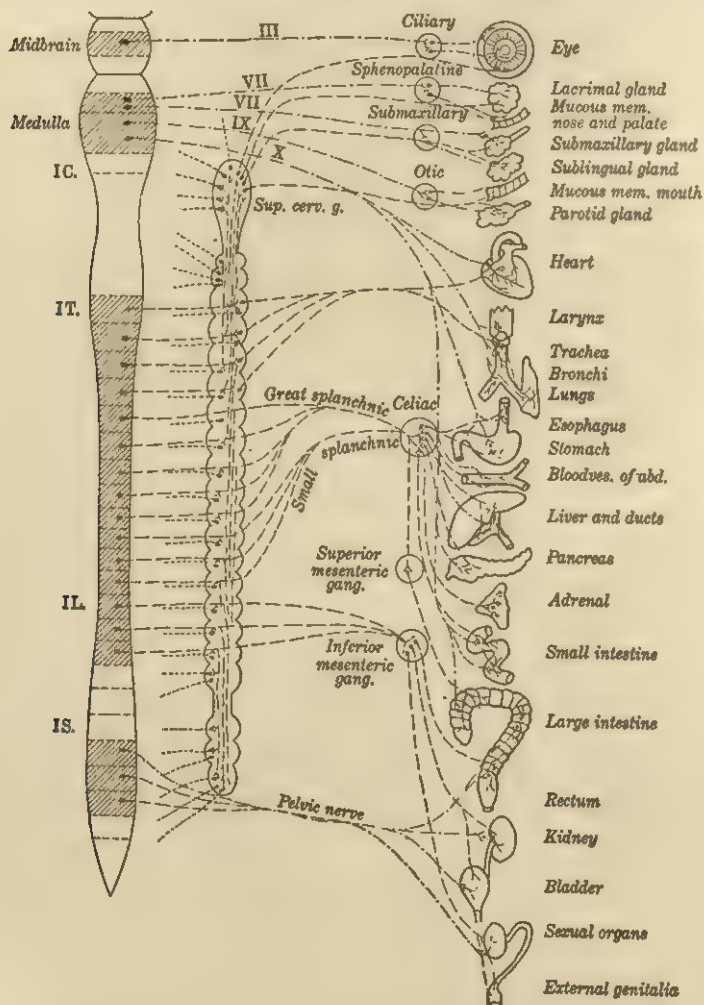


FIG. 15.
Schematic illustration of the autonomic nervous system. (From Gray's *Anatomy*, Longmans.)

racico-lumbar segment, and the lower part is called the sacral segment. The cranial and sacral segments have similar functions and together are referred to as the parasympathetic

segment. Let us examine the function of these segments, to see their importance for emotions.

The vast number of organs that are controlled by this system is illustrated in Figure 15. Fibers from the cranial segment go to the ciliary muscles (muscles of accommodation) of the eye, to the lacrimal (tear) glands, the salivary glands, the heart, the lungs, the stomach, the liver, the pancreas, and the intestines. Fibers from the sacral region go to the intestines, the rectum, the kidneys, the bladder, and the sex organs. Those from the sympathetic segment go to those organs reached by both the cranial and the sacral segments. When impulses from two segments of the autonomic system go to the same organ, their effect is generally antagonistic. When parasympathetic innervation causes inhibition of an organ, sympathetic innervation of the same organ causes excitation.

The function of the three segments may be stated somewhat as follows:

The cranial segment is a conserver of bodily resources. It stimulates the secretion of saliva and gastric juice; it keeps the whole alimentary tract in a condition of tonus so that it can perform its nutritive functions to the best advantage. At the same time it inhibits those reactions that customarily accompany excitement. It keeps the heart slowed to a proper pace, inhibits excessive respiration, inhibits the action of the adrenal glands, whose secretion is a stimulant to violent activity.

The sacral segment controls the contraction of the rectum, the colon, and the bladder. In addition to these excretory functions, the *nervi erigentes*, a separate part of the sacral system, causes the engorgement of the external genitalia.

The sympathetic division is antagonistic to the functions of both the sacral and the cranial segments. Its function is largely that of preparing the whole organism for an emergency. The digestive, excretory, and reproductive functions are inhibited and the body is prepared for activity. This is accomplished by the stimulation of those organs that participate principally in violent activity, namely, the heart and the lungs. The pupils dilate so that our most important distance receptors are prepared for any stimulus. In animals,

the hairs (feeling receptors) are made to stand erect. The blood vessels are engorged, and the organism is ready either to run or to fight, as the case may warrant. In addition to this, the adrenal glands¹ are stimulated and pour out their secretion. This in turn furnishes another stimulant to violent activity. Cannon found that an animal could be stimulated to activity by injecting adrenalin (the active substance of this gland) into its blood stream.

You should not think that the antagonistic action of the parasympathetic and sympathetic segments implies a fight. More probably, they operate antagonistically in a cooperative fashion to bring about the most efficient conduct under the circumstances. Both are likely to be operating at the same time, but one is dominant over the other one, with a merging action being the effect. (Gellhorn, Cortell, and Feldman, 15; Eisebund, 10)

LVI. PSYCHOSOMATICS

It has long been known that a person's mental and emotional condition has something to do with his physical well-being. In recent years interest has grown in the exact relationship existing, especially as we have tended to view the organism and personality as operating as a unit instead of as body and mind. In medicine the study of psychological states as related to physical disorders, particularly where the psychological conditions (usually emotional) contribute heavily to organic symptoms, is called psychosomatic medicine, and one medical journal is devoted exclusively to it.

248. **Conditioning experiments.** As has been shown experimentally, responses that depend on autonomic nervous system stimulation can be conditioned to neutral stimuli. The contraction of the pupil of the eye has been conditioned so that it would occur to a buzzer instead of only to an increase in intensity of light. The heartbeat has been increased by the sound of a buzzer also. If a buzzer is sounded each time the subject steps on and off a stool a sufficient number of times to increase his heartbeat, the buzzer will soon come to produce the changed heart rhythm by itself. These are not emotional stimuli, but they show the possibilities in controlled experiments rather than uncontrolled clinical situa-

¹ The adrenal glands, or suprarenal glands, as they are often called, are located above, and in front of, the kidneys or renal glands.

tions for learning to respond with our smooth muscles to stimuli not expected to evoke such response. We may also be unaware that the stimulus is connected with the response or that the stimulus is even present, and the response will still occur. Clinically this is quite familiar. We are all accustomed to an increase in heartbeat and blood pressure when the name of one whom we love is mentioned. The name, a mere word, is a conditioned stimulus to such response.

249. **Tension.** Such responses as those mentioned above usually subside as soon as the stimulus is removed. Smooth muscles do not continue to function for a long period of time without the presence of the original or the conditioned stimulus. You will recall that the function of emotion and of the autonomic nervous system is to keep the organism on the alert for action, particularly in emergencies. If the organism feels in a state of emergency most of the time then the autonomic nervous system might keep the smooth (and indirectly other) muscles in a state of tension greater than the normal tonus so that immediate action might be possible. With many individuals the amount of tension is all out of proportion to the problems facing them, at least insofar as observers can judge. In such instances it is quite likely that the stimuli for arousing these tensions are no longer in the awareness of the person or that he does not see the relation between them and his visceral responses, much as the subjects in the experiments were unaware of the conditioning to the buzzers. In addition the autonomic-visceral reactions are brought into the full consciousness of the person. He does not know their source and assumes that there must be something physically or organically wrong with him to produce such reactions. This supposition gives him further cause for anxiety and worry and the familiar vicious circle has made its appearance. Psychosomatic medicine assumes, with good reason, that such continued tension can produce physical and organic disturbances, such as high blood pressure, hyperthyroidism, and peptic ulcer. Hypochondriasis may also result as can a depressed state.

250. **Psychosomatic manifestations.** Much speculation, clinical description, and experimentation is going on about the specific psychological backgrounds and mechanisms that

produce psychosomatic manifestations. There is the hypothesis that the compulsive, ambitious person may develop stomach ulcers, and the hypothesis that if a person characteristically is put in anger-provoking situations, which he inhibits to the point of repression, he may wind up with high blood pressure. There are also theories about the development of allergies, such as asthma and urticaria (hives), migraine headaches, disturbances of the thyroid, and the like. This field, while highly promising, is still so new and also medical that we shall not give further descriptions. The student is referred to special writings on the topic, such as Dunbar (9), Weiss and English (36), and the articles in *Psychosomatic Medicine*. One study will suffice to show the experimental evidence that is accumulating. Wolf and Wolff (39) observed a patient with a large gastric fistula (opening) in a position such that the mucous membranes of the stomach could be observed. Emotions such as fear and sadness that involved a feeling of withdrawal were accompanied by a blanching of these gastric mucosa and by an inhibition of the secretion of acid into the stomach. On the contrary, emotions that involved anxiety, hostility, and resentment were accompanied by a rushing of the blood to the mucosa and an acceleration of acid secretion. If this anxiety continued for a long period of time the engorgement of the mucosa with blood and the excess secretion of acid might become so great as to produce slight hemorrhages and erosions. The mucosa normally can help these to heal over in a short time, but the prolonged anxiety accompanied by more acid and engorgement could so adapt the mucosa that the erosion would increase, producing an ulcer.

LVII. THE FORMATION OF EMOTIONAL PATTERNS

Emotional patterns begin as gross behavior which often has little specific effectiveness. Such behavior soon leads to efficient adaptive behavior with a lessening of the vague tensions and the elimination of random activity. The only way to prevent abnormal emotional patterns is to react energetically and continually to the emotional stimulus until a satisfactory adjustment has been found.

251. **Random emotional behavior.** The essential need of the organism in an emotional situation is to make some ad-

justment to the thing that causes the emotion. Since this, in the last analysis, is some external object, the only effective type of behavior is some sort of skeletal activity. It is when the available skeletal responses at our disposal are inadequate that the autonomic nervous system and the endocrine gland system intervene to step up our activity or to change the pattern of response. The significance of this intervention is that it makes us act differently so that we may, perhaps, act more effectively.

Since the child has learned but few efficient skeletal patterns, his emotional behavior is likely to be largely undifferentiated activity with considerable visceral and glandular reinforcement. His emotional behavior can be described fairly accurately in terms of the degree of excitement or of relaxation he manifests. Loud sounds, violent stimulation by being dropped through space, hunger, pinpricks, the discomfort of restraint, or excessive temperature changes will all produce emotional behavior which is so uniform that an observer cannot tell, from the behavior alone, which situation is causing the emotion.

252. Emotions should stimulate efficient conduct. Learning takes the form of doing something more specific and to the point than yelling, kicking, or squirming. For these random forms of behavior the child soon substitutes such activities as running, climbing upon objects, fighting, calling for a specific person, getting (instead of being given) something to eat, putting on a coat, and the like. Consequently, as we grow older, many situations that caused diffused emotional behavior in infancy, induce in us a sensible, adequate adjustment. For example, instead of screaming when we are hungry we calmly eat some food. The emotions of the adult should be reserved for unusually violent or strange stimuli. Emotional development is away from visceral and glandular involvement toward coordinated and efficient skeletal activity. Some individuals, to be sure, do not make this adjustment and, as adults, manifest the volatile behavior of an infant.

Emotional patterns should likewise change in reference to the stimuli that arouse them. Any loud sound will frighten an infant, but an adult has learned the significance of many sounds and either ignores them or makes an intelligent re-

action to them. Some persons fail to develop properly in relation to emotional stimuli. A grown person may cringe at the sight of a cat, a mouse, or a chicken. A man may avoid the company of all persons and cling only to his mother, never having developed beyond his emotional attachment to his mother. The normal person learns, early in life, how to change his behavior toward different stimuli; he learns indifference to some that originally disturbed him; he learns sensitivity to others that, at first, induced only indifference; and he learns to substitute one emotional stimulus for another. Furthermore, he learns that certain emotional tensions have a salutary influence upon him, and these he cultivates. He learns that others are pernicious in their effect, and these he shuts out of his reactions.

253. Degrees of emotional maturity. While, on the whole, the emotional life of adults follows quite different patterns from that of infants, on occasion, even the well-adjusted adult reverts to infantile forms. Mature and immature reactions may alternate. We can illustrate this by observing the behavior of three people in a crisis. Suppose a man is driving a car with his wife and child as passengers. A reckless driver threatens to crash into them, and the father averts the catastrophe only by violently turning off the road, landing in the ditch. The driver does the right thing in this crisis because he happens to be a good driver and makes the correct reaction without any reflection or any reinforcement from his autonomic nervous system. After the crisis is over, however, he feels himself becoming emotional. Why? Because his reaction to the crisis, although adequate, did not take care of all the nervous energy set loose by the anticipation of a possible wreck. This excess stimulation was deflected into the autonomic system, causing smooth muscle tension and endocrine reactions. Since smooth muscles act slowly and hormone activity takes time to become effective, neither type manifests itself until the crisis is over. They are emergency reactions which, in this particular instance, are of no value because the efficient driver did the right thing immediately. In the infant the visceral tension and hormone activity drive the subject to activity, hence precede the skeletal behavior. In the efficient adult the reaction is a relatively automatic

affair and occurs before the visceral tensions manifest themselves. When an adult does the right thing in a crisis before he has an opportunity to become emotional, it is a fairly good sign that he is emotionally mature.

The child is too young even to know that a danger threatened them but is disturbed by the violent movements of the car and by the screaming of his mother. He begins his reactions to these after the crisis is over and probably has the least emotional reaction because he has not seen the significance of the situation.

254. Emotions indicate need for adjustment. From this discussion it can be seen that an emotion is the prime indicator of a maladjustment of any sort. In earlier chapters we have shown how a conflict with the external world demands a readjustment of some sort, and how an internal conflict between elements in the personality may lead to the adoption of a defense mechanism. Emotional behavior plays a prominent part in all such conflicts. A conflict is the stimulus for emotional behavior, and the emotional reactions, in turn, drive the person on to varying forms of behavior until a solution is reached. In other words, emotions should be a wholesome phase of human life. They should make us work our way out of predicaments, they should stimulate us when we are so complacent that we fail to respond when we should, and they should make us adopt new ways of meeting situations when our accustomed methods have proved futile.

What, then, are abnormal emotions? They are emotions that do not accomplish their end of driving us on to a better adjustment. Sometimes the patient fails to adjust because of emotional immaturity, sometimes because he has become too much centered on a specific emotional stimulus, sometimes because he uses the wrong pattern of response, and sometimes because he builds up internal tensions owing to inhibitions against any sort of adaptive behavior. At other times the patient will stress his emotional behavior as a sort of "smoke screen" to hide the fact that he has failed to adjust to the emotional stimulus. For example, an abnormal fear indicates that its victim has not made the proper adjustment to the fear stimulus. As a device to hide this failure, he talks about his fear, asks advice as how to get rid of it,

and wants some means of dealing directly with his fear. He does not need help in controlling his fear; he needs help in ridding himself of the object that caused the fear. If one is confronted by an angry wild animal, one must do something about the animal and not about the fear.

If a person always did something when emotionally aroused, he would avoid many abnormal emotional tensions. The principle of wholesome emotional adjustment is simply this: *Do something*; preferably something appropriate.

Landis and Bolles (24) have set up some criteria for judging the appropriateness, the normality or abnormality, of emotional responses. While there may be differences of emphasis and overlapping, they suggest that we use the following standards of reference. (1) If the response is a *usual* one or one that might be *predicted*, it is normal. (2) If the response is one that would be appropriate because of a *personal relationship* involving the person and someone else, it is normal; otherwise abnormal. (3) It is normal if *appropriate* or *relevant* to the situation according to cultural norms; otherwise abnormal. (4) If the *duration* of the emotion deviates significantly from that shown by most individuals in similar experiences, it is abnormal. (5) If the emotional expression would cause *injury to self or others*, it is abnormal.

LVIII. JOY AND DEPRESSION

In the present state of our knowledge, it is not possible to relate the different emotions that we may observe in an individual to specific parts of the autonomic system, any more than it is possible to localize a reasoning process in a particular convolution of the cortex of the brain. A knowledge of the general mechanism of the autonomic system should, nevertheless, help us to understand how emotional abnormalities develop and function in this field. With this outline of emotional activity, we shall take up the dominant emotions and study the most significant abnormalities they manifest. The emotions we shall study are joy and sorrow, fear and anger, and love and hate.

255. **Excessive joy.** When the organism is functioning properly, when there is no pain or discomfort, when stimuli are readily and satisfactorily responded to, the individual has a general feeling of well-being. From what we have seen in the mechanism of the autonomic nervous system, we can assume that under such conditions the smooth muscles are

working in harmony; the heart and lungs are not overstimulated, the alimentary tract is in a normal state of tonus, and the skeletal musculature is receiving just enough stimulation to meet the present requirements. Joy and sorrow are the two emotions that we experience when we swing in either direction from this hypothetical state of balance. The normal person is continually shifting in this respect and his life is a succession of joys and sorrows. When the swings are extreme we have elation or depression.

1. *Elation.* Elation may be regarded as a normal response when it seems to the observer to be in keeping with the environmental situation in which the subject happens to be placed. If we have been struggling along for a living, we may be in a fair emotional balance. Should the news come to us that we have inherited a vast fortune, the balance may be destroyed and we may become extremely happy, at least for the time being. Soon other things come in to balance the situation in spite of our good fortune, and we return to a medium condition between joy and sorrow. It is abnormal for a person either to go to the heights of elation with no apparent cause or to remain in this state for an unduly long period.

It is often difficult to decide when an elation is normal and when it is not. Whether the elation is the result of circumstances or whether we feel elated and then try to find a reason is not apparent in all cases. We have shown in an earlier chapter how a person can develop a delusion to escape an emotional conflict. Evidence points to the conclusion that our mood may, in some instances, be the result of physiological conditions, and the cause that the subject brings forth is often a superficial attempt to explain the feeling. Regardless of the cause, the normal man is the one who responds to an emotional stimulus and then gets over the emotion. The abnormal one is the one who responds either inadequately to the stimulus or, if he does respond, does so to an extreme and then fails to get over it. Hence the only way we can judge whether an instance of elation (or any other extreme emotional condition) is normal is whether or not it appears rational. Since reasons may be fictitious, the difficulty of determining normality in a display of elation is apparent.

2. *Euphoria*. The extreme of senseless elation is called euphoria. In this condition the patient is happy in circumstances that are ill calculated to make him so. Having eaten a meager meal, he will say that it was the finest feast he ever tasted. With uproarious laughter he will tell you that the hospital is the finest hotel in the world. He is so filled with joy that he is simply unable to contain himself. Any normal person may feel happy without being able to assign a valid reason for his mood; he just "feels good because he is alive." He may, on occasion, even go to extremes in his sense of well-being, but he stops short of foolish excess. Euphoria shows up in his giving vent to his feelings in whatever expression strikes him, with little regard for consequences. Inhibitions are gone, and repressed complexes may come out in peculiar sublimations. This behavior is most typical of the manic form of manic-depressive psychoses although it may be seen in any excited state.

256. Indifference. Indifferent behavior may arise from several diverse conditions. It may be the result of satiety, the person being worn out by previous emotional experience. Or the individual may have had some bitter experience and, as a means of defense against future disappointments, may refuse to respond to the present. The teaching that emotions are degrading may have been taken so seriously that the subject assumes an air of artificial indifference. Or, the indifference may be the behavior of a person who is so lost in himself that he ignores ordinary environmental stimulation.

Far from being a sign of stability, emotional indifference is recognized, by those who study unusual individuals, as a symptom of serious import. It signifies pronounced inhibition. If a person has a queer emotional reaction, it may be trained into a normal pattern. If the person is so inhibited that he makes no response, the inhibition must be overcome before re-education can be accomplished.

257. Depression. Depression is the opposite of exaltation and elation. When depressed the person has a feeling of unhappiness. When the circumstances seem to warrant such a feeling the condition is regarded as normal. But if there are no circumstances to warrant such a sadness, we call it a de-

pression. The common theme of depressions seems to be a lack of drive or motivation, which leaves the patient confused and bewildered. He feels "low," hopeless, and highly inadequate. He cannot understand why he should feel so because the reasons are usually well repressed. Not understanding his predicament, he feels more depressed and there follows a dullness and mental retardation with great difficulty in thinking. When the feeling goes far beyond the condition of the individual or his surroundings, it becomes morbid indeed. Persons who become victims of such morbid depressions may, in extreme cases, sit for hours in the most profound dejection. If they can be made to express themselves, they will tell you that they are most miserable, that they have nothing to live for, and wish to die. They may put their affects into action and commit suicide. Some persons actually enjoy their depressions, while others use such conduct to secure sympathy or to gain some end.

If the depression follows an actual event that might normally produce sadness, we call it a *reactive depression*. If it were not so intense or did not continue over such a long period, it might be considered normal. Such depressions sometimes follow the death of a loved one, the loss of position or money, and the like. Often there can be shown a conflict in the patient's life concerning the event or those connected with it, such as guilt feelings about how he treated and felt toward the loved one.

258. Swings of emotional exaltation and depression. While on the surface these persons, whether exalted or depressed, seem to have no rational cause for their affective extremes, upon complete investigation they are usually found to have a background for their emotional attitudes. Sometimes the condition is aggravated by a physiological cause. Toxic conditions, extreme exhaustion, or similar disturbances may contribute. But usually, even with these as contributors, there can be found in the mental life of the patient an accumulation of circumstances which becomes too powerful, and the individual succumbs to its influence.

This accumulation results when normal, immediate response to an emotional situation is inhibited. The individual gets no outlet, until finally the response, when it does come,

is out of proportion to the immediate precipitating factor. This is well illustrated in the following case: A girl who had built many visions of married life, learned at the age of seventeen, when she became the wife of a man ill suited to her, that those dreams would not be realized. She reacted quite violently to this situation and in a short time secured a divorce. Financial difficulties made her new position rather difficult and so she decided that she would cold-bloodedly marry a man in order to obtain financial support. She decided that she could restrain all her emotional life and live a matter-of-fact existence. Consequently, although she was extremely unhappy with this second husband, she showed not the slightest sign of it until, after about three years of such a life, she suddenly went into a violent spell of elation (known as mania). She became vivacious and happy, quite the opposite of what she had been during her three unhappy years. After a period of this abnormal joy, she recovered and was able to talk rationally about the whole matter. She returned to her home, restrained again every expression of emotion for another period of three years and then went into another spell of elation. Her periods of wild euphoria may be regarded as the breaking-out of all her pent-up feelings. She restrained them as long as she could and when they got beyond her she would take respite in this flight from reality.

What we see in such a case is an increasingly violent condition of antagonism between two patterns of the autonomic nervous system, which the patient subjectively experiences as a pent-up emotion. When the tension between these two becomes too strong, one side finally breaks down and the other gets complete control of the situation for the time being. Exaltation and depression, while apparently quite diverse in character, are seen to be very closely related reactions.

LIX. ANGER AND FEAR

Anger and fear, like joy and sorrow, we shall find, are perfectly normal reactions. Only when they are out of proportion to the environmental conditions or when one or the other becomes a pernicious habit can they be considered abnormal.

259. **Anger.** The stimulus to anger and the result of such stimulation is a preparation of the organism through the

sympathetic segment of the autonomic nervous system for a fighting reaction. The mechanism of anger is a very strong and vital part of every human being, and it is an abnormal individual who cannot be aroused to anger by an adequate stimulus. Training in this field should be directed toward providing an adequate and social outlet for these impulses rather than toward a futile attempt to repress them. There are several forms of abnormality of the anger response.

1. *Apathy.* The apathetic individual is the one who does not respond to a stimulus of an emotional nature. You cannot make him angry, not because he is afraid, but because he does not care. You may maltreat him, stick him with a pin, push him around—but to none of these physical stimuli will he respond with anger. You may call him names, make unkind remarks to him and he will fail to give any response. This condition must be carefully distinguished from a depression. A depressed patient can be made to respond easily to an unpleasant stimulus, and one feels sympathetic toward him. But in the case of true apathy one is amazed at the indifference that is manifested. The patient simply fails to respond emotionally. If you slap the face of a normal man, he will be aroused in spite of himself. But such a slap will not get even a reflex response from the profoundly apathetic individual.

Since apathy indicates a complete dissociation from the surrounding environment, it is a most serious symptom. For this reason, at the first indications, such a condition should be corrected before it reaches an advanced form. The early indications are often overlooked because the beginnings of apathy may be mistaken for good conduct. The boy who is irritated and as a result of such irritation works harder, or strives to remain calm, should never be mistaken for the boy who cannot be irritated. The former will eventually give vent to his anger in a manner that may lead to a normal adjustment; while the latter, being totally apathetic, is manifesting one of the cardinal symptoms of hebephrenic schizophrenia, a disorder which we shall discuss in Chapter XV.

2. *Irritability.* The irritable person is just the opposite of his apathetic counterpart. He will "fly off" on the slightest pretext. So ready is he to go into a rage that any situation can act as the final signal to let loose a torrent of rage. He is

the person whose anger responses are too extravagant for the stimuli presented.

The epileptic person is presumed to have irritability as a characteristic of his personality. Just why this is so has not been adequately explained. It is possible, however, that his disease causes a continual irritation of certain neural centers. The indefinite prolongation of such irritations may possibly act the same as a series of irritations from the external environment. These finally accumulate and cause the explosion. Whether or not this is the explanation, it is well known that some epileptics have violent outbursts of anger which may lead them to all sorts of destructive acts.

Since epilepsy is comparatively rare, only a few cases of irritability can be explained on this basis. Most cases are the result of poor training. Two of the most common types of such irritability are described in the following paragraphs.

3. *Temper tantrums.* In many cases this undue irritability is no more than a habit. A child may try various methods to obtain what he wants and in the process of trial and error may find that his mother yields more readily when he goes into a rage than at any other time. Consequently, when he wants something, he goes into a tantrum and usually succeeds in gaining his ends. Such tantrums are quite common in children. One afternoon the author saw a mother and father walking past a movie house with their six-year-old daughter. As they walked by the box office the child began a temper scene. She cried loudly, threw her arms about, and the tears ran in torrents. The father talked to her and tried to comfort her. The mother petted her in vain. Finally, they turned and walked toward the box office. Immediately the child's face brightened, and as the three went into the movie house, the child was radiant with joy. Much of the irritability of adults is nothing more than this. They cover it with many clever disguises so that the motives are not so apparent as those of the child, but close analysis will reveal them.

We must not assume, however, that the person who "throws a tantrum" has coldly calculated to do so. This may be the case, but usually is not. The real reason lies in the fact that the person is about to fail in something at which he needs to succeed to maintain his own self-regard or feel-

ings of security. Such a threat may make him feel irritated and angry. If he vents his anger on himself or others, he may gain some reduction in his frustration and in the process influence others to "give in" to him, give him attention, or sympathize with him so that there is further compensation for the anger.

4. *Restraint and irritability.* It is well known that violent outbursts are the result of a prolonged period of restraint of anger in situations well calculated to bring an anger response. What schoolboy has not teased his teacher, watching her get nearer and nearer the breaking point until finally she bursts forth with great violence? While we may have accumulations of pent-up emotions of any sort they are probably more common in the realm of anger than anywhere else. Suppose we get up in the morning with the decision that, no matter what happens during this day, we will be sweet-tempered. In spite of our determination things may go wrong. We may stub our toe, cut ourselves while shaving, be unable to find the styptic to stop the bleeding, get to breakfast late and discover that the toast is burned and the coffee cold, but through all this we keep cool and even-tempered. Then some trivial thing occurs and we unexpectedly have a violent outburst. Those around us cannot understand why we are so irritable. If they knew all the facts, the repressed anger impulses that have at last gained an outlet, they would not be so surprised.

5. *Persistence of anger.* Some persons persist in an angry attitude for extremely long periods, a personal characteristic of which teachers and other social engineers should be cognizant. They may wait for years to obtain revenge for a wrong, whether real or fancied. Cases have been known of a person's spending years of his life having as his guiding star the impulse to wreak vengeance upon some individual. The story is told of a girl who was abused by a foster mother. She was later separated from this woman and lost all trace of her. She spent the major portion of her time and energy trying to find her. Finally, after twenty years, she received information that the woman was in a city a thousand miles distant. She made the journey, found the woman, learned that she was the foster mother of her youth, and then killed her. In such cases one often finds delusions of persecution as

an element in the situation. The original wrong may be real, but when the person gives himself up to his emotions of anger, the minor wrong may assume gigantic proportions and lead to acts of great violence. Persistent anger accompanied by a desire for malicious revenge is one of the most dangerous of emotions, although it does not appear so bizarre and irrational as many other symptoms we may find. If a person has occasion to get angry, it is better to give vent to his anger in some manner than to harbor it for any length of time.

260. Fear. Fear is one of the most important emotions we have. In its place it is a valuable response. Out of place it is most destructive. Since today most fears are out of place, their mastery is extremely important.

1. *Relation of fear to anger.* Fear in its expression is the opposite of anger. Faced with a difficulty we may either fight or run. The difficulty may stimulate us to activity in two directions: we may fight, if the similarity of the immediate situation to other situations in which a fight has brought success induces us to fight; or, if the situation is one which experience has taught us to shun, we will flee.

For a very simple reason fears are more likely to become pathological than are other emotions. The way to keep an emotion from becoming pathological is to adjust at once to the situation giving rise to it. If we are stimulated to anger, we usually make an adjustment; we fight and either win or lose. If we lose, we are unhappy and are likely to admit it; if we win, we are elated and express our elation. Such immediate adjustment prevents pathological developments. With fear the situation is entirely different. Fear indicates that we have not made an adequate adjustment: it means uncertainty. Even running from a difficulty is only a temporary adjustment with the normal man. It is a retreat to gather strength for another attempt at a more honorable solution. If we make no immediate adjustment or if we make an inadequate adjustment, we are left in a state of tension that may easily become pathological.

The passage from fear to anger is a very easy one to travel. While the two are apparently very different in their manifestations, their cause is the same, namely, a difficulty, and the two are merely different reactions to this common cause.

The transition is a matter of common experience. For example, if, while a man is walking along calmly, thinking of no danger, an automobile horn is sounded loudly just behind him, he will give a violent start. His first subjective reaction will be one of fear. If, upon looking around, he sees the leering grin of a driver who evidently has a distorted idea of a practical joke, he is very likely to become exceedingly angry, and the anger is intense in proportion to the intensity of his first fear reaction. Such a reaction is beneficial, for if the anger had not come the person would have experienced a persistence of the fear reactions.

2. *Anxiety*. Crile (8, p. 61) portrays the condition of one in fear by a striking comparison: "An animal under the stimulus of fear may be likened to an automobile with the clutch thrown out but whose engine is racing at full speed. The gasoline is being consumed, the machinery is being worn, but the machine as a whole does not move, though the power of its engine may cause it to tremble." In fear the heart beats faster, the breathing is accelerated, the sweat glands and the adrenal glands are stimulated to greater activity, all the parts of the organism that are needed for a fight are put in order for energetic activity. Fear should thus be an adjustment reaction, a preparation either to fight or run. When it does not lead to either, it is evident that such a violent upset cannot persist for long periods without making trouble. When the fear becomes so intense, is all out of proportion to circumstances, and is not directed toward any one object or situation, it shades into anxiety.

Anxiety is a very important symptom in mental disorders. Jones (22, p. 474) gives four reasons why he considers anxiety of profound significance:

1. Morbid anxiety is the most frequent symptom in all psychopathology.
2. The intensity of distress it may give rise to is equalled by that of very few other forms of suffering.
3. Its understanding will lead to a comprehension of other mental disorders.
4. It is a disorder that in a great many cases obstinately resists treatment, unless this is based on a proper understanding of the pathology of it.

The anxious person is in a continual state of morbid dread. This dread attaches itself to everything that has a bearing on

the life of the patient. He worries about his studies, his business, his finances, his relations with other people, his religion, his physical condition, his mental health, and even about his anxiety. His inconsistency makes it apparent that the assigned cause of the anxiety is only an artificial excuse. If he is worrying about his grades, an assurance that he is receiving an *A* in every subject will only shift the worries to something else. We can preach contentment to such a person until we have exhausted all our energy, but such preachment does no good. We can solve his problems only by removing the underlying cause of the fear. The difficulty is that the fear is not specific in spite of the fact that the individual may worry about specific things. The expressions that we see are the effects and not the cause.

Of what is the anxious person afraid? The patient himself does not know. He may see the disproportion between his emotional reactions and the possible causes, but he cannot restrain his feelings in spite of this recognized discrepancy.

The following picture is typical: A young man who has made excellent grades all through his college career is, without apparent cause, filled with worries. These worries were precipitated, he says, by the death of a friend of his in an accident. The friendship was not intimate, but he worries just the same. If a person gets sick, he wonders if he will get the disease and worries about that. Then he is perturbed because these fears are silly and wonders if his mind is all right. He argues with himself that it is normal, because otherwise he would not be able to get his schoolwork as well as he does. He has not had any serious love affairs so this cannot be the trouble, and since he has never had to consider finances this is not an issue. In short, he has nothing of a financial, religious, moral, health, or love nature to worry him. All this he tells you in the same breath with the complaint that he is worrying. Free-association tests elicited the fact that about the time his worries started he had been informed by a girl friend that her sister had become involved in some sexual difficulty. This caused a profound emotional disturbance, not because he was in love with the girl, or for any other apparent reason. It merely did.

This incident was followed by a recurring dream to this

effect: The most demure and most innocent girl he had known had been married some time previously. He dreamed that she came to him and told him that previous to her marriage she had given birth to two sons who were now in orphanages. She told the dreamer that she was afraid that her husband would find it out.

The two circumstances of the dream and the incident of the girl who had become involved in difficulty indicated that he was afraid of the moral stability of women. Other circumstances which we need not mention corroborated this interpretation. He was the only child in his family, was beginning to make his adjustments to the outside world, a difficult thing at best for an only child, when he was told the incident that shattered his faith in womanhood. This was the real background of his anxiety. What if he should marry a woman who was unfaithful to him?

But why did this take such a hold upon his imagination? Other persons hear such incidents without losing their sense of proportion or being filled with morbid anxieties about all sorts of trivial affairs. Such a reaction is usually found in individuals who feel insecure, who feel that they do not quite "belong," perhaps because they have been too much shielded so that they have not had the opportunity to develop any confidence in themselves. At least, their confidence is gone if they ever had it.

We sometimes see a parallel in the sheltered child who has night terrors and anxiety spells when he is left alone by his mother. She must come and comfort him until he goes to sleep. He cannot be left alone without fear and trembling. As he grows older these manifestations may become less marked, but let some unusual circumstance accost him and he reverts to the childish impulse to run to his mother's arms or to some other shelter. He cannot face life's exigencies without a terrible dread of what might ensue. Anxiety is based, in short, on a fear of one's ability to master the varying problems with which one is confronted.

Morbid anxieties are very often related to the love life of the subject. The reason for this is rather apparent. If an individual is afraid of many circumstances in life, he adopts the simple expedient of avoiding all situations that look danger-

ous to him. When it comes to avoiding the possibilities of love involvements, he cannot so readily escape because his own impulses drive him into danger. He attempts the same expedient he has always used, that of avoiding the difficulty, but every suggestion of a love impulse within himself makes him afraid of his love life. This condition is especially aggravated if the patient has any perverse tendencies. These will be described later in Chapter XVII.

3. *Phobias*. Abnormal fears of a specific object are called phobias. Since one may develop an abnormal fear of almost any object of experience, the number of phobias is very large.

Fears cover a tremendously wide range in human experience, so wide indeed that a person would make a mistake if he tried to explain them all in the same manner. We now know that there are few things of which we are innately afraid, from which we naturally deduce that most of the fears that we find are the result of experiences of one sort or another. Investigation will enable us to unearth experiences well able to account for some of the fears that we find. In other instances our search for a reason is not so easily rewarded.

The illustration we have given at the beginning of this chapter of the man who was intensely afraid of high places portrays a very intense fear that was built up by a series of experiences adequate to account for the phobia that manifested itself in later life. The fear is real because the patient has had good reason to be afraid of the thing that is involved in the fear.

A valuable rule to follow in our attempt to understand the background of fears is to refrain from assuming that a person is afraid of nothing. It does no good to pass off a queer fear with the statement that it is all imagination. One is never afraid of nothing, and the most irrational fear becomes rational when we learn the mechanism that gave rise to it. To tell a person with a phobia to forget it is ridiculous. When we know the cause of a fear, we can teach the person to become acquainted with the feared object. Such acquaintance will serve to banish the fear unless it is of something worthy of fear. One should continue to fear a wild animal that is free and anxious to attack. If the animal is placed in a cage,

the fear will vanish. If we are afraid of some impulse in ourselves, we must learn either to control the impulse or to protect ourselves from it in some manner. A discovery of the real cause will usually suggest the solution in each case.

LX. LOVE AND HATE

Love is without doubt the most complex emotion that human beings experience. It proceeds from simple beginnings, passes through various stages in the course of development, until at last it reaches the form that we find in most human adults. This whole pathway of development is subject to numerous deviations. Love is behind most of the great human achievements, but is also capable of more perversions and abnormalities than any other human emotion. We shall trace the stages of its normal development here, and shall consider here, also, hate, which is closely allied to love. The nature of love's various deviations will be discussed in Chapter XVII.

261. Development of love.

1. *Love of self.* Certain experiences or conditions of the newborn child produce pleasurable emotions and others bring him unhappiness. For some reason that has not been explained the child attempts to maintain or cause a recurrence of the conditions that make for his satisfaction. About all we can say of this attempt to maintain such satisfaction is that it exists. Whether we call it a wish, an instinct, a reflex, or a hunger matters little. These are only names to indicate a phenomenon that we have not been able to explain. This tendency is not unique in man. Any organism will tend to maintain situations that fit in with its normal functioning and will resist any disrupting condition.

These primitive conditions of satisfaction are probably present when the different parts of the organism are working in harmony; when the segments of the autonomic system are well balanced, when the heart and lungs are operating at a satisfactory rate, when the digestive tract is in a natural state of tonus, and when the sensory impressions are not too violent. When this balance is upset, there is dissatisfaction, and the organism reacts by random activity which may bring back the condition of balance with its resultant satisfaction.

So far as we can determine, this organic satisfaction is the basis of what we know as love. At first the child is the passive recipient of whatever comes, and his satisfaction is the result

of some set of circumstances in which he plays but an inactive role. At this period the satisfaction itself is most important. We may call this the self-love stage, because the individual is wrapped in his own feelings, with slight emphasis upon what brings those feelings into play. If he does learn what circumstances bring about the condition, these circumstances have meaning only in terms of personal pleasure.

2. *Development of erogenous zones.* One of the factors most closely related to the child's comfort is adequate ingestion of food. He is uncomfortable and unhappy when hungry and is satisfied by taking food. The part of his sensory organism most concerned in eating is his mouth, and so this part of his body is likely to become related to satisfaction. It becomes more sensitive than most other parts.

Other areas become connected with pleasure by association. If, when he is nursing, he rests his cheek on a soft shawl he is likely to connect impressions from such soft objects with satisfaction. Many a child thus develops a habit of not being in comfort until his cheek is placed against a soft object. Others tend to continue the pleasure of infant eating by sucking their thumbs. This is especially likely to be the case if the nursing is not continued long enough to produce complete satiety. The fact that the child is held by the mother during nursing makes him enjoy the experience of being held, and having learned this, he will show dissatisfaction until taken up by his mother. Rhythmic movements may be related to nursing so the child must be carried up and down the room or jolted up and down in a carriage. In other words, he learns to love the things that contribute to his satisfaction. The sensory zones, or skin areas, that give rise to initial satisfaction have been called erogenous zones.

3. *Autoerotism.* Having learned that certain conditions contribute to his satisfaction, the child may learn that by his own endeavors he can bring things to pass that will accentuate such satisfaction. Such attempts are known as autoerotic acts. If he places his thumb in his mouth, he finds that he can produce satisfaction without the help of outside circumstances. He can do the same by bouncing himself up and down in his carriage or stroking certain parts of his body.

4. *Love for others.* In the same manner love for others is established. If the child finds that satisfaction comes from certain behavior on his mother's part, he includes her as part of his self-gratification. If it happens to be the nurse, the father, the sister, or the brother who is most concerned, they also are included in the circle. We love others, in the first instance, because they bring us satisfaction.

5. *Delayed satisfactions.* The first satisfactions of the child are rather simple and are taken at their immediate value. As experiences grow in complexity the nature of satisfactions becomes more intricate, and the child learns that if only immediate gratifications are considered he loses some later ones. Consequently, he learns to defer attempts at immediate gratification because he has found that such a sacrifice will bring greater satisfaction later on. If he eats all the candy in the box, the pleasure of engorgement may be followed by the pain of a stomach ache. Such experiences teach him to maintain a proper balance between immediate gratification and the postponement of satisfaction. Furthermore, he learns that if his only consideration of others is to obtain immediate satisfaction from their acts, they sometimes withdraw their favors. He makes temporary sacrifices to obtain their good will so that in the long run he will gain their favors. This leads to the virtue commonly known as altruism, which is the bestowing of favors upon others without the expectation of an immediate return. Needless to say, many persons never acquire this virtue. Many a person who has married and has raised a family, has never advanced beyond the stage of demanding immediate gratification for all favors bestowed. He usually gets less in his attempt to get all.

6. *Involvement of sex in love.* If, as a person matures, he learns his lessons properly, he finds, upon reaching full maturity, that a person of the other sex can contribute more to his happiness than is possible from any other form of personal relationship. After reaching this stage, he learns the next lesson—that his happiness is augmented by the satisfaction he is able to contribute to the other person. He gains the most happiness by seeing the one of his choice supremely happy.

There can be no doubt that the sex drive plays an im-

portant part in this, as well as other, love relationships. Just what that part is, is still a matter for conjecture. The psychoanalysts have made the most extensive hypotheses about the role of the sex drive in our entire way of living as well as in our love life.

7. *Parental love.* If a father and mother get satisfaction only from what the child is able to contribute directly to them, these parents are still in the self-love stage. The real parent learns that he gains intense satisfaction from seeing the happiness he is able to produce in his child. This last stage is still one of personal satisfaction, but it is of quite a different sort from the primitive one of wanting immediate bodily comfort. The joy that the unselfish mother feels when she sees her child delighted with the toys that he has received for Christmas is a much more mature type of satisfaction than the experience of the full stomach that made her happy as an infant.

Yet a true understanding of this more mature satisfaction involves a knowledge of how it developed from the primitive form. The altruist is not one who forgoes pleasure; he gains more pleasure than the selfish person. He has learned the final lesson of love, namely, that a person gains more happiness through bringing happiness to others than he can ever gain by seeking directly his own satisfaction. If a mother does not arrive at this goal, it is not because she lacks some mysterious instinct, it is because she has not adequately learned one of the most important lessons of life. Some never learn it.

262. **Perversions of love.** We shall postpone a discussion of love and sexual perversions until Chapter XVII when we deal with psychopathic personality.

263. **Hate.** Hate is the opposite of love and may be called forth by any of the objects capable of stimulating the love impulse. When such an object leads to an unsatisfactory love response, the reaction is one of extreme discomfort, and the emotional attitude toward the stimulus for this discomfort is what we call hate. Let us examine this relationship between hate and love.

1. *Hate and love closely related.* Because they are opposite in their expression, we are sometimes led to think that the two are not related very closely, but such is not the case.

The transition from love to hate and from hate to love is very easily accomplished. Once having had a strong affective reaction toward any person or thing, we are unlikely ever to become neutral toward that person or thing, at least to the particular phases that gave rise to the original emotion. Many personal relationships are begun by an active dislike of one person for the other.

2. *Ambivalence*. This is a term that is applied when a person has a feeling of love and hate toward the same object. This is well described by Bleuler (4, pp. 125-126):¹

Even the normal individual feels, as it were, two souls in his breast, he fears an event and wishes it to come, as in the case of an operation, or the acceptance of a new position. Such a double feeling tone exists most frequently and is particularly drastic when it concerns persons, whom one hates or fears, and at the same time loves. This is especially the case when sex is involved, which in itself contains a powerful positive and almost equally powerful negative factor; the latter conditions, among other things, the feeling of shame and all sexual inhibitions, as well as the negative valuation of sexual activity as sin, and the evaluation of chastity as a cardinal virtue. But such ambivalent feeling tones are the exception with the normal person. On the whole he makes a decision from the contradictory values; he loves less because of accompanying bad qualities, and hates less because of accompanying good qualities. But the abnormal person often cannot bring together these two tendencies; the hate and love manifest themselves side by side without the two affects weakening or even influencing each other in any way. He wishes his wife's death and when hallucinations picture it for him, he is desperate, but even then, besides crying he can at the same time laugh over it.

LXI. EMOTIONAL RE-EDUCATION

Successful re-education of the emotions requires a careful analysis and understanding of the existing emotional pattern, the selection of a pattern to be substituted for it, and painstaking care in utilizing the proper method to effect the substitution. Repressive techniques are never successful and should always give way to positive training designed to give the patient an adequate and wholesome set of reactions for each emotional stimulus as it appears.

264. Emotional re-education the aim of most therapy. Actually a change in emotional reactions and values is one of the chief aims of all psychotherapy. We shall discuss this in a later chapter. Reconditioning, catharsis, distraction de-

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vices, are all helpful if in the retraining process the basic cause of the emotional disorder has been modified.

The greatest distortions in emotional patterns result from the fear that we may be incited to some act that is contrary to our moral or aesthetic natures. This fear becomes so great, on occasion, that we are unable to view the situation calmly and select a substitute response. Instead, we distort the visceral pattern in order to deceive ourselves and others as to the real nature of the emotion. We develop one emotional pattern in order to disguise and hide another. The person who is extremely sad will become acutely happy in an attempt to avoid the sorrow. The person with a murderous impulse may become extremely solicitous of the welfare of the enemy whom he would really like to see dead. Another person may apparently be extremely depressed when, as a matter of fact, the depression is an unconscious defense mechanism to cover a guilty feeling.

The only re-educational process that is at all effective in such situations is based on the discovery of the essential pattern behind the disguise. After such discovery an effective adjustment may be made to it.

An illustration of this procedure may be found in a situation in which a boy seemed to have an inordinate desire to suffer pain. He placed himself in situations where he was abused, maligned, and actually injured physically. Why? He had committed an act which, to him, was sinful. He escaped detection but was harassed by a guilty conscience and a fear that he might be caught. The resultant suffering was so unendurable that he unconsciously longed for discovery so that he might take his punishment and thus be relieved of his internal suffering. Failing in this wish, he placed himself in positions to receive injury and suffering at the hands of his comrades and thus, having atoned in a measure, he assuaged somewhat the pangs of conscience and apprehension that he was suffering.

When a child or an adult gives evidence of suffering from some emotional pattern that is out of proportion to the stimulus invoked to explain it, and when this emotional pattern is not relieved by the ordinary methods of release in skeletal activity, we can fairly assume that the essential nature of the

pattern is disguised and that the visible pattern is merely a defense device. The real pattern may not even be known to the victim, much less to the physician, the teacher, or others who have contact with the patient. In such cases, careful work with the free-association technique, the guessing device, or any other method in order to unearth the forgotten experience is essential for a true understanding of the situation.

Regardless of the complexity of the individual case, the psychiatrist's aim is relatively simple. It is: Teach the patient to face squarely each emotional stimulus as it arises with the purpose of making the best adjustment to it. This "best" final pattern is always a skeletal response, the internal tension being but an intermediary stage in such adjustment.

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CHAPTER XII

SLEEP, DREAMS, AND HYPNOSIS

Sleep itself is surely a normal, not abnormal, phenomenon. That it has been little understood by scientists makes it no less normal but makes some of its abnormal manifestations harder to understand and to treat. There are doubtless both physiological and psychological factors involved in the way a person sleeps as we would expect in a unified organism such as man. We may say the same about dreams although we are beginning to understand that dreams are a part of the mental life of the dreamer. As such they may be used to throw light on his personality instead of being viewed with superstition, awe, or disdain. Some of the phenomena of sleep and dreams may be seen in hypnosis, but we shall find that there are certain distinctions between sleep and hypnosis which make the latter basically unlike sleep. Hypnosis, like dreams, can be used to study the personality of the person hypnotized.

265. Illustration of significant childhood dream.

The incident happened when he was about four years old. He had seen for some days that the water-iris in the draw-well moat was beginning to open, and his "hands tingled to pluck some of the lovely golden buds." Arrived at the stream, he climbed down to the water's edge, and stretched out his hand to clutch the flower, when he slipped up to his neck in the water. Soundly rated by his mother, he nevertheless soon found himself at the moat side again, and splash!—the former process was repeated. He was saved by his mother, who soundly rated him as before, and dressed him up in his festal suit. As luck would have it, before long he was beside the moat for the third time, and caution was flung to the winds when the temptation was repeated. "There were those golden flowers again mirrored in the water and exciting my desire; but a desire so passionate, delirious, excessive, as to make me forget my two previous disasters." He stretched out his hand as before, the reed he clung to with the other hand snapped off short, and for the third time he was in the middle of the stream, head foremost. There was a great fuss made, but he was saved, given a dose of medicine, and put to bed. "Worn out with emotion, I soon fell asleep. Can any one guess of what I dreamed? Why, of my iris flowers! . . . In a stream I beheld the most beautiful clumps of iris covered with a perfect wonder of golden blossoms! Little dragon-flies with blue silk wings came and settled on the flowers, while I swam about naked in the laughing rivulet and plucked by handfuls and armfuls those enchanting yellow blooms. And the more I picked the more sprang up. All at once I heard a voice calling me . . . I awoke and to my joy I saw a great bunch of golden iris shining

by my side. The master himself, my worshipful sire, had actually gone to pick those flowers I so longed for and the mistress, my dear sweet mother, had placed them on my bed." (Ratcliff, 94)

In this illustration we see a boy obtaining in his sleep, in the form of a dream, the flowers he had been unable to procure when awake. Numerous questions come to mind when we read such a story. Why did the boy dream? Was it because he had the accident which precipitated his being put to bed, or was it his desire for the flowers? Did his desire for the flowers determine the content of the dream or had the fact that his mother entered the room with the flowers something to do with it? Was the dream an omen that he would receive the flowers? Does the nature of the dream reveal qualities of this boy's personality? Although we may not be able to answer all such questions definitely, we may find it valuable to review the theories proposed by recent investigators.

LXII. SLEEP

Sleep is an important symptom of mental stability. While partly a physiological process, sleep has many characteristics that are occasioned by habit patterns. Inability to sleep may indicate failure to relax and is sometimes one of the first signs of instability to appear in a patient. Excessive sleep may be organic, or it may be a functional defense mechanism.

266. **Sleep and relaxation.** Normal sleep is characterized primarily by a decrease in activity, and by an enormous increase in the magnitude of the stimuli, or the number of stimuli, necessary to produce integrated reactions. These changes in motor activity and sensory responsiveness are relative, there being all degrees, from the soundest sleep to the keenest alertness of waking life. Consequently, it is very difficult for an observer to determine whether a person is awake or asleep under many circumstances. Various criteria have been used to determine whether a person is asleep and the depth of the sleep: the immobility of a person for an arbitrarily chosen period of time, the inability of a person to make coordinated reactions to a specified stimulus, the disappearance or extreme diminution of postural reflexes, and large increases in electrical skin resistance when measured on the palms of the hands. Sound sleep comes only in relatively

complete relaxation of large segments of the body and in a great decrease in sensory acuity; but even in sound sleep there is some movement and some response to sensory impressions.

A central factor in sleep is relaxation, and those favoring a motor theory of consciousness propose that sleep is the result of relaxation. There is much evidence to support such a theory in the form of studies showing that sleep accompanies bodily relaxation and studies that indicate greater tension under conditions of greater wakefulness and thought. Dorcus and Shaffer (24) discuss several other theories of sleep, including the chemical, the physiological, the biological, and the neurological theories. Each of these has some contribution to make in describing some of the factors that are present when sleep occurs. Over and above all these, however, there is a growing opinion that there is a subcortical "sleep center" (or wakefulness center according to some). This center seems to be in the hypothalamic region as evidenced by the somnolence of patients with inflammatory diseases that have affected the hypothalamus and nearby areas. On some occasions direct stimulation of these subthalamic sections has resulted in drowsiness. Such a center would have connections with both the cortex of the cerebrum and with the autonomic nervous system. (Hathaway, 50) This would mean that the very important role of habit in sleep as mediated by the cortex could be accounted for and also that the protective aspect of sleep could be understood through the mediation of the autonomic system. In connection with this autonomic relation it has been noted that there is a diurnal rhythm of temperature and of sleep in human beings, and that they go together, a fall in temperature being associated with the onset of sleep. These rhythms seem to hold even when an artificial day of twenty-eight hours is imposed by having the person live in a cave.

267. Motility and sleep rituals. It is difficult to summarize the findings regarding motility during sleep except to say that sleepers are far from perfectly quiet during the night. The normal sleeper never remains long in one position, but there are wide individual differences in the amount of motility and the period of the night during which the most

motility occurs. With some the early part of the night is the least motile, and with others it is the middle portion. Some people move as often as once in every eight minutes and others go for as long as about thirty minutes without any significant movement as measured by devices attached to the bed and by motion pictures. Interestingly enough, many sleepers assume approximate mirror images of their former positions each time they move.

We maintain our individuality when we are asleep, and this may mean that we will extend some of the activities of waking into the sleeping state; we may talk, walk, and move about in our sleep on unusual occasions just as we may do other unusual things under similar circumstances when we are awake. But by and large we have our usual sleep and wakefulness curves and our own motility curves during the sleeping period. We are likely to maintain these until there is a major environmental change to which we will be able to adjust if we are healthy and well-adjusted, as witness the worker on the day shift changing to the night shift and making the adjustment quickly and without much ado.

In addition to diurnal rhythms and characteristic motility curves for each person, there may be certain rituals through which he goes to help him to go to sleep. These habits may be very potent in effecting a sufficiently relaxed state for sleep to follow. Photographic records of sleepers indicate that most persons have a fairly definite ritual. One person will lie for a time on one side, turn over to the other, and then curl up into a ball before going to sleep. Another must assume certain postures with his arms, legs, head, or trunk; others must read themselves to sleep, or fix their pillows in a certain manner. Of course, such rituals can become veritable compulsions and assume a neurotic character, as in the case of the young man who went through an hour's performance each night before retiring, including making a complete inventory of all his possessions. The normal person's ritual helps to induce relaxation but is not necessary or so fixed.

268. Effects of deprivation of sleep. While there appears to be a great variation in the amount of sleep required by different persons, experiments have shown that some sleep is essential. One investigator (DeManaceine, 22) kept ten

nursing puppies awake for varying periods. One died after 92 hours, one after 143 hours, and all ten were dead within a week.

A number of experiments have been made to determine the effects of sleep deprivation on efficiency in a great variety of mental and motor tests. (Johnson, Swan, and Weigand, 67) The general conclusion from these studies is that efficiency in these tests is not adversely affected when the subjects are deprived of sleep for periods ranging from 40 to 115 hours. Little detrimental effect was found on physiological functions by Kleitman (70) and by Katz and Landis (69). The conclusion concerning psychological effects should be accepted with reservations, however, because the investigator using the longer periods admits that some of his subjects, in spite of all his precautions, secured little naps while undergoing certain tests, such as the basal metabolism test, during which the patient had to remain quiet for a considerable period.

Corroboration for the conclusion that loss of sleep was detrimental was found in the behavior of the subjects in activities not included in the tests. One investigator reports that "during the second night one of his subjects 'found it impossible to read or to study.' On the day following he had great difficulty in taking lecture notes. 'After a few words had been written in the correct fashion, his hand would begin to slip . . . would slide across the paper, and instead of words there was unintelligible scribbling.' After the third night, 'taking lecture notes was entirely impossible, as the pencil would fall out of the subject's hands after he had been sitting for a short while.' . . . Attempts to count one's own pulse were almost always unsuccessful, because the subject would lose trend of the count after he had reached twenty or thereabouts, or else would become extremely drowsy. . . . One reactor required to drive a car, soon landed it in a ditch on the *left* side of the road. A member of that group would occasionally attempt to lead the rest in singing, but after a stanza or so would drop into a different song." (Johnson, Swan, and Weigand, 67)

The conclusion that follows from these experiments is that the human organism is extremely adaptable, that, while

there is a detrimental effect from loss of sleep, which shows itself in the incidental tasks, the subjects respond to the challenge of a test situation and overcome the deterrent effect in so far as the test results are concerned.

269. **Narcolepsy.** The term narcolepsy is used to refer to recurring attacks of sleeping which are irresistible and which occur at any time and place. Usually accompanying this uncontrollable sleep is another symptom called *cataplexy*. This is a loss of muscular tonus and resulting weakness, especially during emotion. In fact, both narcolepsy and cataplexy (some call cataplexy a symptom of narcolepsy) are most likely to occur under stronger than usual emotion; boisterous laughter seems especially prominent in preceding narcoleptic attacks. Normally, of course, emotion is accompanied by increased tonus and intensified wakefulness, not by relaxation and sleep.

Usually narcoleptic attacks occur in situations normally conducive to restfulness, as after eating, in a movie theater, on trains, in church, etc. But sometimes they occur in embarrassing or unusual places. One truck driver had attacks when driving and had to stop by the side of the road, later having to give up his job. (Murphy, 87) Soldiers have had attacks under their first bombardments, and one patient fell asleep in the dental chair during the drilling of a tooth. (Levin, 76)

Sleeping attacks are so varied in their manifestations that it would be dangerous to generalize as to the cause of such attacks; quite likely, some are organic in nature, while others may be defense mechanisms with a purely functional background. Cohen (14) proposed an adrenal insufficiency as a cause for narcolepsy, but his theory has not been fully substantiated. Lion (78) has suggested, on the basis of a statistical study of twelve narcoleptics and twelve normals, that an emotional strain upsets the autonomic nervous system in such a way (through increased vagotonic activities) as to bring on an attack of sleep. In many ways the sleep resembles natural sleep as shown by similar brain wave patterns. (Dynes and Finley, 28) Whatever the physiological mechanism, it is bound to be much more complex than the simple involvement of the "sleep center" as proposed by some.

In some cases the sleep may be a means of escape from an undesirable situation. Such a reaction may have been learned by accident, sleep having proved itself an escape from similar difficulties in the past. In such cases psychotherapy is definitely indicated, and Langworthy and Betz (72) report that its use may be highly beneficial. Symptomatic relief may be obtained in many instances by the use of benzedrine, amphetamine sulfate, or ephedrine. An example of sleep as an escape from reality is given by Willey and Rice. (109, pp. 175-176)

When Millard was four years old, he threw a piece of glass at a boy, and the boy happened to be what they call "a bleeder." I guess this frightened Millard nearly to death. Apparently no one saw him do it. He came into the house and said, "I'm tired; I want to go to sleep." I did not know then, of course, what had happened, though he actually looked as though he would fall asleep then where he stood. He was always affected like that when he did anything wrong, and he actually would lie down anywhere, perhaps under the bed, and go to sleep at once, even with his hat and coat on. He always would sleep until I woke him for his next meal. Not infrequently I would be going around the house and find him asleep. Then I would know that he had done something wrong... I remember the day he was two years old. I took him to have his picture taken. He did not want to go, and all the time they were trying to take him, he kept saying, "I'm tired. I'm tired!", and I thought really he would fall asleep.

Some fainting spells in adult life may be explained on this same basis. When a mental conflict becomes too intense, the person may escape by losing consciousness. Sometimes a patient, while narrating some phase of his mental life, comes suddenly to a critical and especially painful situation and faints away. The natural tendency, in such a case, is to take steps to revive the patient. We have learned that at such a time one has an excellent opportunity to elicit some crucial fact. When a patient, while experiencing an emotional upset, says, "Oh, let me get some air or I will faint," we have found that it pays to tell him to faint. He will usually re-enact for us the scene of his difficulty in a way that would be impossible if he remained conscious. He goes through a sort of somnambulism.

We do not mean to imply by this discussion that the whole of sleep consists of an escape from reality. There is an essential physiological background. But in human life this

physiological element becomes connected with the escape factor to such an extent that we cannot fully understand sleep unless we recognize the psychological aspect.

Furthermore, there can be little doubt that a large component in the sleep of modern man is habit. There is a physiological necessity for sleep, but the length of time that we sleep, the quality of our sleep, the necessary concomitants of sleep (such as a particular bed, darkness, quiet, and the like), the degree of motility during sleep, and the ease with which we relax are probably mostly learned habits.

LXIII. DREAMS

Like sleep, dreams are not abnormal in and of themselves. Most people dream, and most people are in no observable way adversely affected by their dreams. It is fairly well accepted today that dreams are essentially a continuation of the waking life of the person in sleep, but that certain factors make the mental life in sleep different in appearance from that in the waking state. We shall be interested in these differences and in interpretations of them. Many workers have found dreams useful in gaining a clearer perspective of the total mental life of abnormal persons, since it is supposed that in dreams certain aspects of one's personality that are usually kept from consciousness may be revealed. Sometimes even in dreams these facts of personality are disguised, and it is in the interpretation of these disguises that much disagreement is found among psychologists and psychoanalysts.

270. Some characteristics of dreams. Let us see some of the characteristics of dreams that have made them the subject of so much misunderstanding.

1. *They are related to some sensory field.* Investigations have shown that by far the greatest proportion of dreams are visual. Next in order are auditory ones. Over 90 per cent are probably either visual or auditory or a combination of both. The order of frequency of dreams in the other sensory spheres from the most to the least frequent is kinesthetic, tactile, olfactory, and gustatory.

Dreams are in the form of hallucinatory experiences, which depend for their material upon actual past sensory experiences. These experiences are, of course, so recombined that they often cannot be traced to an actual sensory experience, any more than an hallucination can, but the sensory background is, nevertheless, essential. Jastrow (63) has made this clear by his study of the dreams of blind and deaf persons.

Of thirty-two persons who became blind before the completion of their fifth year, not one had visualization in his dreams. Of six persons who became blind between the fifth and seventh year, four visualized clearly in their dreams, the others seldom and vaguely. Of twenty persons who became blind after their seventh year all had *dream vision*. This and other studies indicate that a dream involving any sensory field depends upon previous experiences in that particular field.

2. *Reconstruction dreams.* Many dreams are reconstructions of former experiences or phantasies, which occur as the result of some sensory stimulation's playing on the sleeper at the time. Levin (75) gives the example of a person who dreamed that he was watching a baseball game. He saw the pitcher wind up, throw the ball, and then saw the ball hit the bat. As the batter swung and hit the ball, the dreamer heard the loud report of bat meeting ball. Just at that moment he was awakened by the sharp sound made by the window shade as it flew up and struck the top of the sash because of a defective spring. Cubberly (17) demonstrated the same phenomenon by sticking gummed paper to various parts of the bodies of sleeping persons; in one instance, when it was placed on the sole of the foot, the sleeper dreamed of dancing. Such examples indicate that many dreams are the free associations that occur as the result of a sensory stimulus that influences the mental life of the sleeper without awakening him. Levin compares the reconstruction dreamer to a detective who stumbles upon the scene of a crime and must reconstruct a succession of events that will account for the evidence that meets his eye. The sensory impressions are misinterpreted or expanded in an effort to have them make sense, and yet the integrating effect of the cerebral cortex cannot be brought to bear to give them the "right" sense. (Horton, 54) Many dreams can be so explained but the influence of desires and emotions in the free association of reconstruction must not be forgotten.

3. *Dreams are often illogical and incoherent.* In our waking life we endeavor to control our thoughts, or, if that is not possible, at least to see some chain running through the sequences. If we can see none, we feel that our minds are

certainly disordered. Yet incoherence is the very characteristic that marks our dreams in so many instances. The dream thought jumps from one thing to another so that the whole is one confused jumble. When we narrate dreams we attempt to fit them into some sensible order, but if we were, in each instance, to record the dream exactly as it occurred, it would not be sensible or coherent in the ordinary sense of these terms. This can be easily demonstrated. If you wake in the middle of the night after having dreamed and write down the dream exactly as it occurred, you will find upon waking in the morning that, if you attempt to relate the dream without consulting your notes, your narration will be quite different from what is recorded. It is almost impossible to get an experienced observer to narrate a dream without interpolating explanatory and organizing material.

4. *Dreams often violate our moral principles.* Sometimes an individual receives a rude shock when he awakens, remembering a dream that is diametrically opposed to the moral ideals he has built for himself. What is he to do in such a case? If he admits that his dreams represent some phase of his personality, he must admit that he is not so moral as he fancied himself in his waking hours. Most persons adjust to this situation with the feeling that they are not responsible for their dreams. Our forefathers blamed these dreams on visitations from evil spirits and barred their doors and windows to keep the evil spirits away while they slept. Many delays in the development of an explanation of the dream process have been due to the unwillingness of the investigators to admit that they had the impulses that their dreams indicated.

Most readers will readily recall this immoral element in some of their own dreams. We commit in dreams acts for which we should weep tears of blood if they were real, and yet in our dreams never feel the slightest remorse. The familiar check of waking hours, "I must not do it because it would be unjust or unkind," never once seems to arrest us in the satisfaction of any whim that operates in our dream life. Attitudes of respect and scorn, emotions of love and hate, feelings of dependence and authority, may exist side by side toward the same individual so that the person may kowtow

to him at one instant and give him thirty lashes the next, be solicitous for his welfare in one "scene" and sentence him to death in the next.

5. *Proportion and time are distorted in dreams.* Everyone is familiar with the peculiar and embarrassing situations he can find himself in, in dreams. Everything seems to be going along smoothly when a tricky twist occurs to distort the whole picture. Particularly is this true of time relations. Not only may there be much jumping about of time, but very great intervals of time seem to occur in such a short dream period. No doubt only the high spots are touched in the dream itself, but in the remembering it seems that all the details were also filled in.

6. *Dreams may be easily forgotten.* When an impressive experience comes to us in our waking life we have a strong tendency to remember it, but a situation of equal or greater intensity occurring in a dream may be immediately forgotten. An individual may have very vivid dreams, as attested by the fact that he has actually acted them out in his sleep, and yet on awaking may disclaim any memory of having dreamed at all. In other instances the dream may be very vivid when the sleeper awakes, so vivid that he may be emotionally disturbed about it. Yet, in a few hours, if he attempts to recall it, he finds it impossible to do so. Strangely enough, this tendency to forget is not confined to unpleasant dreams but may affect pleasant ones or indifferent ones as well, as recall under special circumstances testifies.

Other characteristics of dreams might be enumerated, but these outstanding features are the ones that must be considered in any theory that may be devised to explain them. In proceeding to a study of dream theories we should like to add a word of warning against any tendency toward oversimplification. Dreams are as varied in form as mental life itself. Just as our understanding of mental life depends upon viewing it from different angles and under different circumstances, so our understanding of dreams involves viewing them from different angles. One dream may be explained in one manner and a second in another. We should avoid the attempt to place all dreams in one category and to explain them all by some simple formula.

7. *Occasionally a somnambulism occurs.* Somnambulistic behavior is the fairly well-organized but automatic-appearing action of a person who is apparently asleep but is acting as though he were awake, as in sleepwalking. We sometimes refer to the behavior of an hypnotic subject, who responds as a personality rather than just to specific suggestions, as somnambulistic. In the sleeper it is obvious that these are not senseless activities. They really form the expansion of a dream, beginning and developing in a regular manner, centered around a focal topic, and progressing to a definite conclusion, unless the person is awakened. Upon awaking he is very likely to have forgotten the content of his somnambulism. Evidently, the victim of these sleepwalking episodes becomes dominated by a single idea, often an idea that he would not recognize as a part of his waking personality. Its existence is evidence that an important part of the subject's personality has been blocked off from conscious recognition. This is borne out by the fact that, if attempts are made to have the person recall the dream, he may again revert to the sleeping state as he re-enacts the dream.

Perhaps an example of a somnambulism will make more concrete the complicated performances through which a person may go while still asleep, without remembering the episode when awake. A young man who had seen action in Germany in World War II and had returned to his home in the United States was heard leaving his room by his younger brother. A little while later the brother heard him return and thought little about the matter. Next day he asked about where his brother went in the middle of the night. The sleepwalker was quite surprised at the question and denied any knowledge of having left his room the night before. Several nights later, the younger brother followed him when he left his room again; the route led him downstairs, through the back door, across the back lawn to the garage door. The somnambulist opened the door, went in, and mumbled what sounded like some violent oaths, made movements as though drawing and shooting a gun, wiped his hands back and forth against each other, and returned to his room. Next day the younger brother confronted the sleepwalker with the story of his adventure and was called an out and out liar.

Nevertheless, the story bothered the veteran, but he could make neither heads nor tails of it and felt that he must be the victim of some unappreciated teasing. Several weeks later the household was awakened by screams from the veteran's room. Members of the family found him sitting bolt upright in bed, in a cold sweat, shaking uncontrollably, and looking scared to death. At first all he could say was, "I did it, I did it," without further explanation. Gradually, he was able to tell them how he had been unmercifully mistreated by a certain German soldier while he was temporarily a prisoner-of-war. He had later been freed and still later found that his German tormenter had been captured and was being held very near to his own quarters. He had an almost uncontrollable impulse to seek his revenge and to kill the German. He successfully inhibited and repressed this desire until the man had been moved, and he thought no more about it; but in his somnambulism he lived through what he had wanted to do but felt ashamed to admit to himself. He was thus protected from knowing of such a base impulse until he was told about his sleepwalking actions. He still denied any significance in them, but in a night terror came close to putting into action his pent-up revenge and awoke in the midst of his dream activity. This was enough to give him a start toward remembering.

271. Dream interpretation. That dreams have some meaning has been believed for centuries. Some have felt they were actual experiences that happen to the dreamer while asleep. Others have called them messages from supernatural realms, often in the form of omens and prophecies. More modern theories place the emphasis on simple results of sensory stimulation explained by the conditioned response or on reflections of the personality of the dreamer. Dreams are so diverse that both explanations could very easily be correct.

1. Contribution of psychoanalysis to dream interpretation. Freud, his coworkers, and followers gave great impetus to the study of the dream life of neurotic patients in an effort to understand their conflicts and resulting symptoms. Freud himself frequently warned that dreams could best be understood in terms of the patient's own free associations, and again today many psychoanalysts are doing the same thing.

But they are having to try to live down the reputation given psychoanalytic dream interpretation by less cautious analysts who, if they followed the patient's free associations, added so much of their own interpretations to them that they were distorted beyond any verifiable meaning.

Part of the difficulty with psychoanalytic interpretation is that certain factors which influence our mental lives were given almost poetic names, and then the processes they represented were expected to derive from the names rather than vice versa. One of these factors concerns *the unconscious* which Freud suggested "contained" inborn perverse tendencies and further undesirable elements from our experiences. This unconscious portion of our personality is called the *id* while the portion that meets reality and is largely conscious is labeled the *ego*. Now the ego cannot tolerate the objectionable, shocking content of the unconscious *id*. In order to protect it there is a *censor* which keeps the intolerable desires and memories out of consciousness when we are awake. When we are asleep such censorship is somewhat relaxed, although it may not be completely so. This lack of complete relaxation is evidenced by the fact that there is still distortion in dreams. The unconscious desires and impulses (called wishes by Freud) do not appear in bold form in our dreams but under disguises. What we see in the dream is called the manifest content as opposed to what it stands for, or the latent content. The method of psychoanalysis in dream interpretation is to discover the meaning of these accessory elaborations of the dream experience. And this has sometimes been done not on the basis of the patient's own life but on the presumptions and assumptions of the operation of our mental life proposed by the particular analyst. One of these assumptions is that the dream represents in a more or less distorted form an ungratified wish. The wishes that come to life in a dream are, for the most part, wishes that have not been gratified because the waking censor of the individual would not permit their expression. They have been repressed, only to show themselves in disguised form in the dream. We have already seen that some dreams are no more than the result of sensory stimulation which arouses some associations that are possible because the person is not attending to any particular line of

thought in his sleep. Dunlap (26), for example, says that many persons dream of being nude, not because they are expressing some unfulfilled sexual desire, but because they are chilly!

All these ideas have the germ of something useful in understanding the dreamer (rather than the dream). We do know that there are many impulses and memories that we do not consciously think about, but that can be made conscious under certain circumstances. In Chapters II and VIII we investigated evidence for speaking of unconscious processes and of repression. Likewise it is instructive to realize that we sometimes fool ourselves through various disguises and defense mechanisms and that our associations do not always follow logical lines. One of Freud's great contributions has been to emphasize the fact that some of the most significant associations are unexpected, bizarre, and even seem to contradict the laws of conscious thought. But these associations depend on the dreamer and his motivation rather than on the nature of dreams or the logical relation between manifest and latent content. Many modern psychoanalysts recognize this fact and attempt to state both the response the dream represents and the underlying events that caused it. They rely upon the patient's own associations and their intimate knowledge not only of the patient but of the circumstances that preceded and surrounded the dream. (Maslow and Mittelmann, 82)

2. *Dreams as indicators of the personality and attitudes of the dreamer.* One tendency that has handicapped the study of dreams has been the endeavor to study the dream as such. If the dream is to be considered as a phase of the dreamer's personality, it cannot be abstracted from the dreamer and considered in isolation any more than can any other mental process. The significance of dream study is not what the dream means in and of itself. This is a relic of the days when the dream was supposed to be implanted in the mind by some outside agency. The true significance of a dream lies in the light it sheds upon the personality and mental life of the dreamer. The question, "What does this dream mean?" becomes changed to "What does this dream tell us about the dreamer?"

This means that similar dreams in different people will mean different things. Why dream life should be made to fit some simple hypothesis such as wish fulfillment is hard to understand. The mechanism used in dream life is the neural mechanism of the dreamer. We have seen that the waking life of the individual is extremely complex and varied. Why should we imagine, then, that the dream life should suddenly be reduced so that it fits into some simple formula?

Life is made up for the most part of making adjustments to ever-varying circumstances. In making these adjustments, we endeavor to give due weight to all the factors that have a bearing on the specific problem of the moment, but impartial consideration is handicapped by conventional modes of thought and by habitual patterns of thinking and acting which prevent us from viewing our problems equitably. In sleep the strain is temporarily thrown off; it must be thrown off or we could not sleep. Consequently, the problems of life may take a different form when relieved from the control that we continually impose upon our thinking while we are awake. It follows that a dream may indicate a solution we should have reached had we let all personal factors operate to the exclusion of waking convention and restraint. A dream is a portrayal of a purely personal attitude toward the issue involved in the dream. It represents what would happen if we were to drift instead of attempting to control ourselves, or if we could get away from the restraints imposed by the external world or by society.

A boy one night dreamed of parallel lines. He could remember no other fact about them except that they literally fulfilled the definition of parallel lines and never came together. Ordinarily, parallel lines appear to intersect as they recede from us, but as far as he could see these lines were no closer together and no farther apart. What did such a dream mean?

These lines suggested to him a theorem he had studied a number of years previously when in high school. He could not state the theorem; he merely remembered that it stated that parallel lines could never meet no matter how far they might be extended in either direction. His next association was of another theorem about non-parallel lines intersecting.

Crossing lines made him think of a girl with whom, some time previously, he had become romantically involved. This romance had been terminated in a manner that made him determined that nothing similar should ever occur again, yet he had a fear that it might recur. This fear had come to him in a particularly vivid manner the day preceding the dream. He had entered upon a new position, which, until that time, had had purely impersonal relationships. In spite of himself, he felt himself responding to a particular girl with whom he was associated. This feeling was a shock to him. Was he beginning another situation that would bring about a repetition of the suffering from which he had so painfully recovered?

According to the Freudian interpretation, this would mean that he wished he could enter another romance. To be sure, this was probably so. It was a recognition of this possibility that started the conflict of the day preceding the dream. Such an interpretation would be no revelation in this case. The boy had a romantic urge, but his previous experience had been a painful one. He was disturbed at the thought of a repetition of what had happened. What should he do? He had worn himself to the point of exhaustion during the day preceding the dream with a futile consideration of the different angles of this problem. Finally, as he went to sleep he sighed and thought, "Oh, what is the use?" He had not solved anything, and, more or less consciously, had done what most of us do under such circumstances, decided merely to let things drift. What was his dream but a portrayal of this drifting?

Now, it would not be legitimate for any outsider to give an allegorical meaning to this young man's dream. Unless this meaning came to the dreamer by the process of free association no outsider would have a right to interpret it for him. If an outsider attempts to do so, he is interpreting himself, or the experiences of others. In this instance, the dreamer, after carrying his associations back to his high-school geometry, and then to his previous unpleasant romance, burst out with the remark, "Oh, yes, I see now that I decided to let things go on parallel, forever, just like the theorem in geometry. I can let my work keep straight on, and my per-

sonal feelings for this girl go straight on. If they are both perfectly straightforward they will never meet. I certainly do not want any such intermingling of the two as I have previously experienced."

This indicates how the interpretation of a dream in this manner can be of value. It was used in an attempt to discover the present attitude of the boy, not to fit it into any theory. This boy had decided upon a solution to a problem, but the nature of his decision had been rather vague to him. He could not have formulated his decision very clearly. The dream associations brought the whole thing to him in picture form and he could see clearly that his hope lay in keeping the two sets of things entirely separate. This does not mean that his solution was the best one; it simply indicates the point he had reached in his wrestling with the problem. The value of the dream is apparent. If a person tells us that he has decided a problem in one manner or that he has a specific point of view, when his associations from his own dreams indicate another solution or attitude, the examiner may know that the patient's conscious statement of attitude is not the genuine one, although he may have been honest in his attempt to state it.

Just as anxiety and fear in waking life may indicate total incapacity to cope with the environment, so an anxiety or fear dream may represent a profound inability to meet life squarely.

A girl for years had a recurring dream about as follows: She pictured herself in her mother's bed, in the surroundings that existed when she was a child of about six. Her father was throwing cotton over her face so that she felt choked, the sensation that one has when very much depressed. She felt as though she must swallow but could not because the cotton deprived her of breath. From this dream she always awakened with a feeling of great depression, a feeling of the general futility of life.

The association to this dream brought up a very unpleasant incident. The mother, unmeaningly perhaps, in a fit of anger had told this girl, when she was a little child, that she was sorry that she had been born. This incident precipitated an enmity between the two which still persisted. The girl had

naturally wished to turn to her father, but, although they were good friends, and she respected him, she could never bring herself to confide in him. The two would take long walks together without either saying a word. If she tried to tell him something, she seemed to choke. For years, as a result of this situation, she had felt that she had no one to whom she could go for advice when in difficulty, no one to comfort her when she was distressed. The recurrence of these dreams portrayed her desire to give vent to her feelings, to pour out her troubles to someone she trusted and loved; but she had no one. One may regard this dream, recurring, as it did, as an expression of her attitude toward the futility of life. It indicated that she had not reached even a tentative solution, except to continue to bottle her feelings within herself. The unkindness of her mother and the smothering attitude of her father are the forces she blames, unconsciously, for her inability to express her feelings. Here, again, we have a dream, recurring in this case, that reveals an attitude toward life.

272. Dangers of vicarious dream interpretation. In concluding this section we wish to emphasize the fact that the meaning of any dream lies in the mental life of the dreamer. Its value resides in its being a pointer to a better understanding of the struggles and emotional attitudes of the dreamer, rather than in any predictive significance.

The method of arriving at the significance of the dream we have indicated to be the method of free association; but we wish to emphasize that the free association must be that of the dreamer and not that of any outsider, professional dream interpreter, or psychoanalyst. It may happen that the dreamer will have associations somewhat similar to those of an outsider. Similarity of environment may lead to similarity of associations in different individuals. But the reason for studying dreams is to discover peculiarities in the life of the dreamer, and this cannot be done if an interpreter, following his own associations, tells the dreamer what his dream means.

May we utter another warning against symbolic interpretation of dreams? We believe that symbolic interpretation is most pernicious. Although he has given a warning against

symbolic interpretation, Freud has gone so far as to suggest that certain symbols are common to man through the ages and that we inherit them. No doubt some symbols are common to a large number of persons, and in so far as they are, the interpretation by symbols may chance to be correct. On the other hand, a great many symbols are peculiar to the individual, and the student should guard himself against the assumption that the mental life of another is the same as his own. If the reader endeavors to study his own dreams, he should adhere to his own associations in doing so. If he attempts to study the dreams of another, he should keep away from his own associations, and consider only the associations of the dreamer.

LXIV. HYPNOSIS

Our purpose in studying hypnosis, as in studying dreams, is to discover what light it sheds upon the personality of the one hypnotized. We shall find that hypnosis is not the result of any mysterious power possessed by the hypnotist, as has often been alleged, but that it is primarily the result of an attitude on the part of the person hypnotized.

273. **An illustration of hypnosis.** A very bright student, physically robust, emotionally well-adjusted, who has been very successful in his schoolwork, volunteers to be a subject in a demonstration of hypnosis. Not knowing whether he will respond to the suggestions that I am about to give him, I note his reactions to some rough tests of suggestibility. I tell him to stand with his feet together (both heels and toes touching), tell him to make himself as passive as possible and to attend strictly to what I shall tell him to do. I ask an assistant to stand behind him (in order to catch him if he falls). Then I hold the palm of my hand about ten inches in front of his eyes, tell him that I shall move the position of my hand and that, as I do so, without any effort on his part, he will keep his face at a constant distance from my hand. After a few seconds I move my hand slightly forward and he sways gently. Then I move it alternately backward and forward, gradually increasing the extent of the excursions until he is swaying in response to the slightest movement of my hand. Pausing a moment while he is standing erect, I say, "I am now going to make you sway so far back-

ward that you will fall into the arms of the man who is standing behind you. Do not try to fall, merely remain passive; but, as I move my hand toward you, you will fall completely." Then as I move my hand toward him, I say, "You are falling backwards, falling, falling." If he falls limply into the hands of the assistant, I can be reasonably sure that he is fairly suggestible.

Having restored him to an erect posture, I tell him to clasp his hands together tightly. I press them together still more tightly, telling him, "When I remove my hands, your hands will be clasped together so tightly that you will not be able to get them apart." I remove my hands and he struggles in vain to pull his hands apart. I tell him gently that he can now separate them and he does so with ease.

I now ask him to extend his arm to one side in a horizontal position and to make it as rigid as possible. I tell him that he is now unable to raise or lower his arm. He makes a few futile efforts to do so but succeeds only in producing a slight tremulous movement. Gently I tell him he can now put his arm down and he does so.

Throughout these experiments the subject is wide awake; he is very much aware of what is going on although he may manifest some surprise at what is happening.

Next he is seated in an ordinary chair, facing away from the class, so that they will not distract his attention. About ten inches in front of his face, and slightly above the direct line of vision, I hold a bright object, at which I ask him to gaze intently. As he looks at this object I tell him, in gentle tones, to relax, that he will grow more and more tired, that his eyes are becoming heavy with sleep, that he is becoming numb all over, and that he is going to sleep. In a short time, his eyelids begin to droop. I tell him that his eyes are closing and that he is going into a sound sleep. After quivering a little, his eyelids finally close and he slumps in his chair as though he were actually in a sleep. I tell him that he is sound asleep and that he will stay asleep until I tell him to waken, that he feels perfectly comfortable.

Now I can begin to give him other suggestions. I tell him that we are taking a walk along the lake shore, that it is a cold day and that he has not sufficient clothing to keep him warm,

that the wind is cutting through his clothes, and that he is cold. In a short time, he begins to shiver, his teeth chatter, and his hands become cold. I tell him that, since he is too cold, we will go into the boiler room of the heating plant and get warm. He ceases his manifestations of cold and his hands become warm. I tell him that we are looking into the furnace door and that the heat is intense. Gradually his face becomes flushed and, if the suggestion is continued long enough, beads of perspiration stand out on his forehead. Then I tell him that we are coming back to the classroom, that the temperature is exactly right, and that he is neither cold nor hot. Upon being asked, he says that he is quite comfortable.

I tell him that we have a radio in the room and that I am going to tune in. After a pause, I ask him what he hears and he tells me he hears an orchestra playing. When I ask him, he gives me the name of the selection they are playing and, when I tell him to do so, he sings along with the music. I tell him that I am going to introduce him to a young lady by the name of Jones. I ask one of the men of the class to stand in front of him, ask the subject to open his eyes, and then I introduce the man as Miss Jones. He arises from his chair and says, "How do you do, Miss Jones?"

After he is again seated, I take his hand and tell him that I am going to make the index finger anesthetic so that when I stick him with a pin he will not feel it. I stick his finger with a sterilized needle and elicit no reaction whatever from him. When I stick one of the other fingers he jumps and says, "Ouch!" I tell him that the finger will stay numb and feelingless after he awakens and until I restore the feeling.

Next I tell him that he is going to lisp. When asked to say "Mississippi," his tongue comes out between his teeth and he has a "good" lisp. I tell him that this lisp will remain after he is awake until I tell him that he can talk properly.

Finally, I tell him that after he is awake he will do some things for me but will not remember that I told him to do them. I tell him that when I put my right hand in my pocket he will look at the man on the front seat next to the aisle on his right and will say to him, "Don't you look at me like

that!" I also tell him that when I brush back my hair with my hand he will leave the platform and take his seat.

Then I proceed to wake him. I instruct him to waken as I count up to ten, so that, when I reach ten, he will be wide awake and will feel rested and refreshed as the result of his nap. As I count, he gradually straightens himself, opens his eyes, and when I say "Ten," looks around as a man would who is just awakening. Asked if he feels all right, he replies in the affirmative.

I ask him if there is anything wrong with his hands. At first he tells me that they are all right and then says that his finger feels funny. I test it with the needle and it still has no feeling in it, much to his surprise. I tell him that it is now as sensitive as the rest of his hand and, when I test him again, he jumps with pain. Asked to say "Mississippi," he attempts to do so but lisps and seems much embarrassed to find that he cannot say it correctly. After I tell him that his tongue is all right, and that he will no longer lisp, he can repeat the word with no difficulty.

Then I put my hand in my pocket. He begins to squirm, gives a glance at the man in the front row, fidgets a little more but says nothing. I ask him if there is anything wrong, and he replies that there is nothing. Then I take my hand out and put it into my pocket again with more ostentation. He squirms still more but says nothing. I tell him that he appears to be uncomfortable and ask him what is wrong. He says that he is uneasy but does not know why. Then I tell him that he can do anything that he feels like doing, no matter what it might be, that it will be all right. After this reassurance he looks at the man in the front row and says, "Don't look at me like that!"

While I am busy talking to the class, I carelessly brush my hand over my hair, whereupon he gets up and goes to his seat. As he is going down the aisle, I ask him, "What made you leave the platform?" To which he replies, "I thought you were through with me."

He has no memory of anything that happened from the time that his eyes were closed until he heard the last part of my count.

This demonstration brings out a number of important facts

about hypnosis, some of which we shall attempt to clarify directly. The fact that the subject is a perfectly normal student shows that hypnosis is a normal reaction. He is suggestible before being placed in a trance, the trance merely intensifying his suggestibility. He has no memory, after waking, of what happened during the trance state. The suggestion that the subject has an anesthetic area or a motor incoordination during the trance can persist, upon command, after he wakes and can be removed by suggestion given after he is awake. He can be made to see and hear stimuli that do not exist, or to distort them in bizarre fashion. He can be given directions to be carried out when he is awake which he will fulfill with certain modifications. He will readily go to his seat and will offer a rational explanation for so doing. Since he has inhibitions against publicly criticising a student for staring at him he will not do so until given considerable reassurance.

We shall first make a study of hypnosis itself and then study some of the phenomena we have observed in this particular demonstration.

274. Historical background. You may have seen a demonstration of hypnosis by a magician on the stage and been impressed by the implication of the magician that it was through his own special powers that he could hypnotize his subject. Popular representations of hypnosis in cartoons or comic strips often depict the hypnotist as sending out magnetic lines of influence from his eyes or fingers. This conception had its modern beginnings with the work of Anton Mesmer (1733-1815). He felt that he possessed a kind of animal magnetism, which he could transmit to persons or objects, and which could cure many diseases. Some of his followers noticed that patients could be made to enter into a state that was called *artificial somnambulism*. The chief characteristic of this sleep was that the ideas and actions of the "magnetized" person could be directed by the magnetizer. With this new discovery, the basic test of animal magnetism was thought to be the power to place a subject into an artificial sleep rather than the healing of any particular disease. Mesmerism then became known as the process whereby one individual, by means of animal magnetism, could cause an-

other to enter into an artificial somnambulism. The emphasis was on the power of the magnetizer, not on the receptivity of the magnetized.

The most significant work in this field after Mesmer was done by James Braid (1795-1860). He found that the artificial sleep could be induced without a magnetizer or magnetized object and concluded that the effect depended on subjective factors within the somnambulistic patient. He called this effect *neuro-hypnotism* to designate the "nervous sleep" he could produce by artificial means.

Braid showed that hypnosis was a subjective process. At that time the physiological and anatomical emphasis was so pronounced that anything not physiological was discarded as belonging to metaphysics and not to medicine. To say that a disease was imaginary was equivalent to stating that the person had none. As long as people had felt that hypnosis injected something into the patient from outside, whether this something was a "nervous fluid," "magnetism," or what not, they could tolerate it as a remedial agent. After the overthrow of these theories hypnotism had no place as a remedy, and since it was superseded as an anesthetic by ether and chloroform, it was discarded by physicians.

The only individuals who would permit themselves to become contaminated by dabbling with hypnosis were those who hoped to make some monetary profit from it. Hypnosis became a veritable stamping ground for charlatans. These fakers, with performances that were mostly trumped up but partly real, went from town to town and demonstrated to gaping audiences how they could put people to sleep for long periods of time, how they could make them so rigid that they could be stretched across the backs of chairs and be made to support heavy weights, and how they could make them do other queer things. To confess that one had any faith in these performances was equivalent to admitting that one was a dupe. No one in the scientific world dared to dabble in anything of such ill-repute.

275. Factors that are conducive to hypnosis. We shall not go into a theory of hypnosis, but we do wish to mention some of the factors that have been proposed as helpful in producing the hypnotic state.

1. *Drowsiness and a restriction of attention.* Most hypnotists begin the hypnotic trance by suggesting to the subject that he is drowsy. He is placed in a comfortable chair, typically, and asked to look slightly upward in a dreamy sort of way. Now we know that when a person becomes drowsy, he is not so critical, he is subject to a kind of fatigue that keeps him from exerting himself mentally, and he is subject to flights of fancy. The hypnotist takes advantage of this vulnerability and manages to keep the subject awake just enough to respond to his words. There is a serious restriction of intake of external stimuli so that other stimuli are not noticed; attention is narrowed and focussed on what the experimenter is saying. (Leuba, 73) An example of the effects of the narrowing of attention in the waking rather than the hypnotic state can be seen when a person is "glued" to the radio during a broadcast of an exciting football game. If someone nearby, at the right moment, and in a quiet way says, "Raise your left leg," the listener is likely to do so, without question. Immediately afterward he realizes his ridiculous position and protests, but momentarily the suggestion "took."

2. *An attitude of extreme suggestibility.* During the early 1930's Clark Hull (56) published a volume of researches on hypnosis in which he showed that hypnosis was not anything qualitatively different from the phenomena of non-hypnotic behavior. The hypnotic trance was largely the extreme of hypersuggestibility. The understanding of such a statement depends on some understanding of suggestion. First, we should make clear that the kind of suggestion we are dealing with in hypnosis has to do with language. Verbal cues that have been associated with actions in the past are utilized by the hypnotist so that the subject responds by performing the acts. He does so in the drowsy, uncritical state in which he has agreed (by submitting to hypnosis) to accept the verbal cues of the hypnotist. It is easy to see how the hypnotist takes advantage of the associative learning of his subjects when he makes use of verbal cues for action in hypnosis. Not all suggestion demands this verbal character, however. There is a kind of suggestion, called ideo-motor, or indirect, in which the conditions are such that a response is

not inhibited when either a natural or a learned stimulus for evoking it is present and effective. Language may play little if any part in this kind. Murray (88) gives an interesting example of a boy watching a magician perform. To emphasize that there was nothing up his sleeve, the magician took off his coat, turned it inside out, and put it back on. Unconsciously the boy went through the same motions with his own coat. Not until his friends laughed at him did he realize what he had done. We can find more common examples in our everyday tendencies to look up if others are looking up, leave the classroom when the bell rings, and the like.

Second, the kind of suggestion usually used in hypnosis is not the indirect kind mentioned above, but is direct and comes from a person with prestige. Prestige suggestion is familiar to us in everyday life when we respond by agreeing with the opinions or requests of those whom we respect and hold in esteem. We know that we are inclined to think the music of Beethoven "better" than that of an unknown composer unless some modern authority whose word we respect pronounces the two works on a par. We are also likely to think a banker a better adviser on financial matters than a druggist. In hypnosis the experimenter is one held in esteem, if for no other reason than that he can perform hypnosis (as a matter of fact, most people could develop the technique). This fact puts the subject in an attitude of acceptance of what the hypnotist says.

In the third place, it is this accepting attitude of the subject which is most important. The *subject* must hold the hypnotist in esteem; the prestige does not come from any other source. The subject must be suggestible to the hypnotist's directions; they cannot be imposed upon him in a mesmeric fashion. In a sense there is no validity to the phrase, "power of suggestion"; rather it is the suggestible attitude of the subject which tells the tale. The skillful suggester or propagandist is the one who understands these attitudes of his subjects and appeals to them, and the skillful hypnotist is one who knows his patient. There have been many attempts to find out whether some people are more generally suggestible than others. Estabrooks (39), Aveling and Hargreaves (2), and Hull (56) have developed tests of suggestibility that

have some relationship to hypnotizability, but these are not tests of general suggestibility. Probably, there is no unitary trait of suggestibility; people may be suggestible in some instances and not in others. Not even prestige seems to make these instances hold together into a single trait. (Eysenck, 41) Not many studies have shown a relationship between hypnotizability and personality traits as measured by common personality tests either. Studies of suggestibility, personality, and hypnotizability are often hard to interpret because there is no indication of the depth of the hypnosis achieved by the various experimenters. The work of Davis and Husband (19) and of Friedlander and Sarbin (45) in setting up criteria for the depth of hypnosis is a step in the right direction to correct this difficulty.

3. *An active, cooperative, goal-directed attitude of the subject.* We know that suggestion, then, is not the influence of one person over another but the subjective tendency of one person to be influenced by the various situations that confront him. The whole secret lies in the person who receives the suggestion. Every experience that entails our relationships with others tends to make us trust or distrust them. If our experiences happen to be of the sort in which we are benefited (made more satisfied or have some need fulfilled) by taking suggestions (consciously or not), we have already learned a lesson in suggestibility. If we suffer when we take suggestions, if we tend to become suspicious, we have learned a lesson in negativism. Coffin (13) has indicated that *what* a person will be suggestible to is determined in part by his attitudes or frames of reference, which have been built up from specific experiences, and in part by the stimulus itself, which should not be too highly structured. This latter means that the subject should be able to expect things from the stimulus rather than be bound by it as might be true of what a hypnotist would say. His words are always acted upon according to the patient's expectation of their meaning.

White (105), Lundholm (80), Dorcus (23), Pattie (92), and others have emphasized the active role the patient takes in hypnosis, especially as he assumes the role he expects he should assume to be a good hypnotic subject. He tries to act as a hypnotized person ought to behave according to the

way the operator defines this role and according to how he understands it. White's (105, p. 43) definition of hypnotic behavior is "meaningful, goal-directed striving, its most general goal being to behave like a hypnotized person as this is continually defined by the operator and understood by the patient." In elaboration of this statement, Jenness says:

Even if the subject knows nothing of hypnosis, the hypnotist defines the situation so that the subject has some idea as to how a hypnotized person should act. If the subject behaves as a hypnotized person should, as he understands it and as the hypnotist defines the situation, then he is hypnotized. In order to achieve his goal of behaving like a hypnotized person, he may have to transcend his normal sensory or motor capacity; he may have to become insensitive to stimuli which ordinarily give rise to pain, or he may have to forget what he would ordinarily remember. He may have to undergo experiences which he would not ordinarily undergo, and he may have to accept beliefs which he would not ordinarily accept. He may have to keep his hands clasped at the same time that he is trying to pull them apart. If he fails to achieve the goal of behaving like a hypnotized person, then he is not hypnotized, and he may be dismissed as a poor subject. (64, p. 494) ¹

276. **Some phenomena of hypnosis.** Many of the things that happen in an hypnotic trance seem to be contrary to what the person would normally do. We have seen that this is true because the person is uncritically accepting the suggestions of the hypnotist and striving to carry them out. Some of the phenomena of hypnosis we are now ready to consider.

1. *Memory changes in hypnosis.* We have already given clinical illustrations in the chapter on Memory which indicate that in the hypnotic trance, memories that have been inhibited may be relieved of such blockings and the memories recovered.

One of the most characteristic features of the hypnotic trance is the fact that, upon awakening, the subject forgets entirely what has happened during the trance. Furthermore, in subsequent trances he may recall the happenings of preceding trances. But if the hypnotist so instructs, the subject may recall parts, or all (depending upon the instructions) of the events that happened in the hypnosis. In addition subjects may be made amnesic for other events than those occurring

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under hypnosis. Such post-hypnotic amnesia may last for a very long time. (Patten, 91; Wells, 103)

Some experiments dealing with the recall under hypnosis of newly learned material have indicated that recall is slightly better in the waking state than in hypnosis. (Huse, 58; Mitchell, 86; Young, 113) Others have shown that there can be a hypermnnesia for newly learned material when it is recalled under hypnosis. Stalnaker and Riddle's (101) work with having students recall in both waking and hypnotic states logical material learned a year previously gave an advantage to the hypnotic recall. White, Fox, and Harris (107) got similar results with poetry and moving-picture scenes. Rosenthal (96) has had success also with hypermnnesia in the hypnotic state for meaningful material learned in the waking state, especially where there is some tension related to the learning and recall.

Whatever change there is in memory patterns in hypnosis is probably not due to any changed power or capacity but to fewer inhibitions and to the fact that the hypnotic subject is relaxed sufficiently for remembering to take place most favorably. In addition, in the hypnotic state provides the utmost in focussing of attention so that all one's mental processes can be directed to the remembering.

2. *Motor capacity during hypnosis.* In the earlier history of hypnosis, fantastic stories were told of the supernormal physical strength and the immunity to fatigue of persons during the hypnotic trance. Any such differences in physical strength and endurance are probably not the result of changes in actual physical stamina but of definite suggestions by the hypnotist. When no suggestion is given to the patient to the effect that he can grip more strongly under hypnosis than when awake, the force with which the dynamometer is gripped shows no difference.

There does seem to be less susceptibility to fatigue in a hypnotized person. Since fatigue is to a great extent determined by feelings of discomfort rather than by actual physiological incapacity, it is likely that this is merely a form of suggested anesthesia to fatigue discomforts. These fatigue pains ordinarily act as inhibitors to work under normal

waking conditions but, when such inhibitions are removed by suggestion, the subject can continue to work without their interference.

3. *Sensory acuity in hypnosis.* One of the most spectacular phenomena in the demonstration of hypnosis is the production of anesthesia to such a degree that the subject shows no visible reactions to a painful pinprick. Is this a true anesthesia? Careful experiments (Sears, 99) have shown that, while the subject represses his voluntary reactions to the pain, the non-voluntary reactions show only a partial reduction. Suggestion seems to produce a partial indifference to sensory stimuli as well as complete inhibition of voluntary response and partial inhibition of the non-voluntary reactions. Hence suggestion does not produce true anesthesia. This fact is further corroborated by the work of Pattie (92) who performed an ingenious experiment in which the subject was not able to tell which hand was being stimulated. One of them had been made anesthetic under hypnosis, but not the other. Subjects made many errors in being anesthetic, and the errors were consistent with the hand they *thought* was being stimulated. He got similar results with non-hypnotized subjects.

Does hypnosis produce sensory hyperacuity? It is easy to make a subject believe that he senses stimuli that would be imperceptible in the waking condition. Tests indicate that there is no real increase in sensitivity. However, there is some evidence that sensory acuity may be aided by the increase in relaxation and the removal of interfering stimuli attendant upon hypnosis. Since this narrowing of attention may be a product of hypnosis, it may enable the patient to respond more unequivocally to minimal stimuli. There is nothing to support the bizarre tales of complete transformation of sensory capacity through hypnosis.

The hallucinations that result from suggestion during hypnosis (hearing an imaginary radio or mistaking a man for a woman) offer nothing out of keeping with the ordinary perceptual distortions we have already studied. We literally see what we want to see, and the minor distortions of daily life are similar in quality and different only in degree from the major distortions in a patient who has hallucinations. When,

in hypnosis, the subject takes our suggestion that he sees a woman, although we present to him a man, his sensory processes are not changed; he is merely being agreeable. Work of the Ericksons (30, 31, 32, 36) has thrown some doubt on the above statements. They feel that there can occur a real deafness and also real hallucinations that are not different from those seen under non-hypnotic conditions. This is an interesting but difficult field of research.

4. *Is hypnosis real sleep?* The hypnotized subject manifests a lethargic state so similar to sleep that superficially it is difficult to distinguish the two. Some striking differences between them have been found, however. The knee jerk usually disappears in true sleep, whereas it is characteristically unchanged by hypnosis. (Bass, 4) Voluntary reactions disappear in true sleep but may be maintained during hypnosis. The establishment of conditioned responses and learning may be effected in hypnosis but not in sleep. (Scott, 98) Respiration, heart action (Jenness and Wible, 66; Wible and Jenness, 108), cerebral circulation (Nygard, 90), and psychogalvanic skin resistance have all been found more similar to those found in the waking than the sleeping state.

A person who is in the hypnotic trance may pass from this condition to true sleep without awaking. Conversely, a person who is asleep may be brought into rapport with the hypnotist, provided previous acquaintance makes such relationship possible. After rapport has been established, the subject's behavior partakes of all the characteristics of the hypnotic trance.

These facts seem to indicate that the essential characteristic of hypnosis is not sleep but rapport with the hypnotist—the willingness on the part of the subject to take prestige suggestions from him. A person may or may not show the outward characteristics of sleep when hypnotized. The only reason he usually does so is that sleep is suggested to him. He behaves, as well as he can, as though he were asleep because he is taking the suggestions of the hypnotist.

5. *Post-hypnotic suggestion.* One of the most peculiar things about hypnosis is what has been called post-hypnotic suggestion. While in the hypnotic sleep the subject can be told that after he wakes he will do a certain thing. He will

follow such instructions, but when asked why he did the thing, he will give some logical reason or simply state that he does not know why he did it.

In one instance the subject was told that when he awoke he would say, "Here is your handkerchief." After he awoke, he sat, seemingly bewildered, made an incipient movement toward his hip pocket, stopped and said nothing. Why did the suggestion fail? For the simple reason that it was senseless, vague, and could not readily be obeyed. He did not have the handkerchief, so how could he give it to the hypnotist? What the suggestion does is to give the subject a set, or readiness, to do the thing he is told to do. If it is a reasonable thing to do, he will do it, but if unreasonable, if it would make him ludicrous, or if it is impossible, he will not attempt it. The other factors in the situation outweigh the force of the suggestion.

This phenomenon of post-hypnotic suggestion illustrates a very important psychological principle. We often do things that seem to us conscious acts, that seem reasonable to us, and the motive for which we can glibly explain, but which are based on impulses about which we know nothing.

277. Will hypnotic subjects harm themselves or others?

The traditional view on this question has been that hypnotic subjects will not commit acts of violence, crime, immorality, and the like that they would not commit or seriously want to commit in the waking state. Janet's (62) famous case of Witt has often been used to illustrate this fact. Witt stabbed, shot, and poisoned with great abandon when she was using paper swords, blank pistols, and fake poison. But she went into a fit of hysterics when told she was in a room alone and she was to undress to take a bath.

Surely, judging from the few instances in which they have successfully been reported and from the denials that they are even possible from many authorities, such acts must be difficult to induce in a hypnotic subject. (Erickson, 33; Hariman, 49) We have no reason to suspect that many, if any, persons will suddenly become the dupes of criminal-minded hypnotists. But the recent work of Wells (104) and Rowland (97) make us reflect on the possibility of criminal or harmful acts in the hypnotic state. Wells used a subject who could be

put into a somnambulistic state (a very deep trance) and caused him to hallucinate the experimenter's coat as his own, take a dollar from it, spend it, and then deny post-hypnotically that he had taken it, but claim it as his own. Wells says the young man followed the suggestion and was vehement that he was innocent when challenged, all this in spite of his known reputation for honesty. Rowland's experiment was almost dramatic. He arranged a curved plate-glass screen so that it cast no reflections and could not be detected by any of a number of people in the normal waking state. Then he put a live rattlesnake behind the glass. Hypnotic subjects who thought the snake was a coiled rope tried to reach for it as did two subjects who knew it was a snake. In another phase of the experiment, subjects were told the serious consequences of sulphuric acid if thrown on a person's skin. Yet two of them threw acid at Professor Rowland who was seated behind the plate glass about which they knew nothing. Both these experiments raise serious doubts about the dictum that an hypnotic subject will do nothing against his moral code. To be sure, in both these instances the subjects trusted the experimenters and may have felt that they would ask them to do nothing really harmful. Nevertheless, they did so. As Professor Wells points out, however, there is extremely little likelihood that hypnosis can be put to actual criminal use, since it takes both an excellent hypnotist and an excellent subject plus ideal conditions to get such results.

In a sense, of course, we can think of all suggestion as dangerous. A scoundrel, for instance, may quite conceivably set out to get a person's confidence with the intent of suggesting some immoral performance. This is done every day. A person would be just as foolish to let any stranger hypnotize him as he would to buy oil stock from a stranger. One does not have to be hypnotized to receive suggestions that are not for one's own good. It is a poor defense, after one has made a mistake, to blame the act on another simply because he suggested it. If I am looking at a diamond and am tempted to steal it and a friend standing by says, "Take it," I certainly cannot blame him for the theft. If I take it, it is because I was partially ready to take it, or I would not have followed his advice.

It goes without saying, surely, that in the hands of amateurs hypnosis can prove embarrassing and harmful. Those without a rich psychological background cannot understand the subtleties of post-hypnotic suggestion and the implications of recall of emotional experiences that may occur in hypnosis. It is a highly valuable research tool and has a place in psychotherapy, but certainly should not be used as a parlor or vaudeville trick.

278. Hypnosis in psychotherapy. After Freud gave up hypnosis in favor of free association as a major technique in psychotherapy, it was considered almost unscientific by many to consider it for such uses. This was partly due no doubt to the fact that suggestion under hypnosis was often used to remove symptoms, rather than to get at the cause of the difficulty. While our goal in psychotherapy is always to remove the cause, we frequently find that we either cannot get at the cause or can do little about it if we do. In such cases symptom treatment might be better than none. But Freud gave up hypnosis largely because he was unable to hypnotize many of his patients deeply enough and because he could get at the repressed material he sought without it. If patients consciously brought out such material, as in free association, he did not have to bother with making them understand in waking life what they had revealed in hypnosis. Research in this field was more or less at a standstill for some time.

Recently there has been a revival of interest in hypnosis for therapeutic use. Its suggestive value has often been shown to merit its use in this connection. Especially is this true when the suggestions are such as to help the patient develop an attitude rather than merely to perform or to refrain from a specific act. (Maslow and Mittelmann, 82) These suggestions have proven most helpful in breaking down undesirable habits, such as alcoholism, insomnia, and certain hysterical symptoms. (Copeland and Kitching, 15) This is not an easy process, however, and may take a number of sessions in the hands of a skilled hypnotist who knows his patient well. Newkirk (89) has found hypnosis useful also with juvenile delinquents in parole and reformation cases. By giving them careful post-hypnotic suggestions in line with their personalities he reports that he has helped relieve some of their

neurotic symptoms and has aided them in conforming to institutional rules.

In addition to its suggestive use, hypnosis is also valuable, apparently, in interviewing. Erickson (34, 37) reports on some use of this kind, and Brenman and Gill (11) have summarized the extensive research program along this line undertaken at the Menninger Clinic in Topeka, Kansas. We have already mentioned the recovery of amnesic material and repressed material in this connection. Such recall may come more rapidly during hypnosis than it would in the waking state. In addition, an interview can be held in an hypnotic trance without the usual restrictions and inhibitions of waking life. The hypnotist can suggest that the subject will remember a certain amount of the hypnotic material later and avoid some of the disadvantages of post-hypnotic amnesia. Controlled association, encouraging the reliving of memories, a permissive attitude on the part of the hypnotist, all can be utilized to advantage with hypnoanalysis. Discussion of one's troubles, gaining insight quickly and understanding interpretations may prove to be more easily accomplished for some under hypnosis. Further research will tell. This kind of hypnotic interview has been called *expressive* by the Menninger researchers (83) as contrasted with the *suppressive* variety of direct suggestion as to what to do or the suggesting away of symptoms.

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CHAPTER XIII

ABNORMALITIES ASSOCIATED WITH PHYSICAL, ORGANIC, AND TOXIC DISORDERS

Up to this point we have been describing various abnormalities that are found in the mental lives of both normal and abnormal people. In a few instances, such as mental deficiency, the behavior patterns seen are so widespread in the personality that the person could be judged as essentially different from the normal. In other cases, such as those of incoherence and certain delusions, the disorder has been so drastic as to be applicable only to seriously maladjusted people. But by and large we have talked about symptoms, syndromes, and the dynamic backgrounds for their development that appear in varying degrees both in otherwise normal as well as abnormal people. From now on we shall see how these abnormalities combine in people who are abnormal enough to be labeled psychoneurotic, psychopathic, or psychotic. Their total quality of adjustment is such as to merit such designation. Our first look at such people will concern those whose disorders are associated with injury, or who have a definite organic basis for their peculiar behavior. This field is not primarily the domain of the psychologist except for the dynamic and behavioral aspects. We shall have to content ourselves with a brief view of these rather than a detailed picture of the physical disorders.

LXV. TRAUMATIC NEUROSES

Trauma means injury. There are certain disorders, varied in symptomatology, which arise as an immediate result of a physical injury, near injury, or such a long drawn-out period of severe stress as to have the psychological effects of an injury. We should not assume that the reactions are necessarily the direct result of organic damage sustained in the injury. Rather the difficulty is primarily one of the personality.

279. Symptoms of traumatic neurosis. In the next chapter we shall go into greater detail regarding the term neurosis, or psychoneurosis. Suffice it to say here that it is a relatively severe personality disturbance in which a person's efficiency is lowered and he reacts to many situations in a peculiar, ill-fitting manner. But he is not likely to be disabled more than temporarily, and he does not completely misevaluate reality.

The symptoms of a traumatic neurosis may appear immediately following the precipitating injury or threat, or they

may not appear for several months. They usually include the symptoms we shall speak of when we describe anxiety in the next chapter, as well as others. The patient is likely to be irritable, to break out in cold sweats easily, to be very sensitive to noises (startle), to tremble on slight provocation, to show lowered vitality, and in severe cases to have hysterical symptoms such as inability to walk, various paralyses, mutism, and characteristically terrifying dreams.

The terrifying dreams are especially prevalent in traumatic neuroses associated with war. They are usually vivid re-enactments of some tense and fear- or horror-provoking experience. They may be so intense that the fear aroused carries over into waking life, and the soldier or veteran is panic-stricken. We saw such an example in the somnambulism described in the last chapter. If the anxiety reaction to an injury or threat stopped with the symptoms of startle, nightmares, and general panic, it was called *combat fatigue* during World War II, since the term neurosis still carried an unpleasant connotation for many. If there were, in addition, symptoms of organic disease, paralyses, generalized physical symptoms characteristic of some of the psychoneuroses (to be discussed in the next chapter), the appropriate name of the psychoneurosis was also given the disorder. During World War I, often the term *shell shock* covered traumatic neuroses.

In civilian life, traumatic neuroses frequently take on the symptoms of other forms of psychoneurosis, and the chief reason for speaking of them as traumatic is that they were precipitated by an injury or trauma. Workmen's compensation laws often complicate the picture for such neuroses. It becomes relatively easy for a man whose lot at work is not too happy to continue neurotic symptoms developed after an injury if he may get paid for doing nothing. Such cases must not be confused with malingering, or consciously pretending to be ill. Such cases do occur, but they are not then called traumatic neurosis. When a man or woman has suffered the symptoms of disease in neurotic form, has had care and attention from relatives, friends, and doctors, and when concern has been shown for his physical well-being over and over, he may feel sure there is something wrong with him

and prolong the symptoms unwittingly. Add to this the fact that he knows employers have been forced to pay large indemnities in similar cases, and he can easily feel that his working capacities have been permanently lowered. Of course, accidents on the job are not the only ones that can precipitate a neurosis. Automobile accidents, sudden losses, fires, and similar shocking threats to life can also be found in traumatic neurosis cases.

280. Background for traumatic neuroses. Do such neuroses occur in people who have shown no previous indications of instability? Sometimes they do, so far as previously observed maladjustments are concerned. This is most likely to be true in war neuroses. Here the circumstances are so difficult and so damaging as to warrant severe personality changes when an injury causes a halt in the ongoing behavior of the individual. Theoretically, perhaps, the soldiers or sailors who "break" have previously been less well-adjusted than those who don't, although the latter, too, have been subject to similar circumstances. This is why some clinicians prefer to say that there actually are no traumatic neuroses, but the injury merely brings into the foreground a difficulty that had been fomenting for some time. This may be quite correct, and yet the injury *did* precipitate the behavior.

In war neuroses, no doubt many cases were so labeled because the break came during a period of combat. Had it occurred in civilian life, a more appropriate name would have been assigned to the consequent difficulties. Many wartime patients had previously shown signs of emotional instability. Slater (83) found in his study that half the cases of neurosis in the beginning period of World War II had unfavorable family backgrounds in which the man might have become more "susceptible" to neurotic symptoms. In such instances the common emotion is usually fear: fear of desertion by loved ones, fear about one's abilities, etc. In cases of injury and severe threat, also, the emotion of fear becomes prominent. With the soldier or sailor this fear of unknown circumstances is accompanied by all kinds of new, and sometimes threatening adjustments: to new living routines (and the lack of routine in combat), to new comrades (and the loss of them), to prolonged exposure, and to all sorts of security-

demolishing experiences. The trauma comes as a sort of final blow, and neurotic behavior follows.

281. **Prognosis and treatment.** A moment's reflection will make it clear that the prognosis of a traumatic neurosis depends on whether the individual has a history of maladjustments leading up to the "break" precipitated by the trauma. In war neuroses treatment was rather effective and prognosis favorable if begun early enough—before there was a chance for the neurotic symptoms to become habitual ways of responding. In these cases, where there was little previous history of severe maladjustment, therapy could be quite useful. Treatment consisted of removal from combat—although the soldier was often kept in the zone where he could expect to get well enough to return to some kind of duty—and a long rest with reassurances from physicians. If he were not able to communicate freely the emotional circumstances of his trauma, he was often given a sedative or mild narcotic to help him remember and partially relive his fearful or horrible experience. He could then release his emotions gradually and deal with them on a more reasonable basis and in a reassuring atmosphere. We shall discuss this kind of therapeutic interview again in the chapter on psychotherapy.

In civilian traumatic neuroses, prognosis may not be so favorable as in the quickly detected war neuroses, because more often here the neurosis is the climax to maladjustments that have been piling up for some time. They are also more likely to take the form of other neuroses and will require the treatment usually accorded them.

LXVI. HEAD INJURY

Injuries to the head have received special attention in medicine and psychology because they involve loss of consciousness and may be complicated by injuries to the brain itself.

282. **Head injuries without direct damage to the brain.** We do not know for sure that it is possible to sustain any severe blow to the head without some permanent damage to the brain. We are certain, however, that there are cases in which the damage is much less serious than in others. If there

is no skull fracture and no blood in the spinal fluid, the injury was not so severe or extensive as where these signs do appear. In this article, we shall deal with head injuries in which the brain damage was sustained through a blow to the skull which did not cause a skull fracture.

The first symptom to be noticed in head-injury cases is loss of consciousness which may last minutes, hours, or even days. There may follow a period of haziness called clouding of consciousness in which a real confusion appears. (Schilder, 77) Headaches and dizziness are common accompaniments, and the patient may show disorientation for both time and place. When examined psychologically he shows gaps in his memory and may be amnesic for the accident and the period just preceding or following it. He may make up for some of his memory losses by confabulation. Reaction time also suffers, although sometimes, if given enough time, patients can perceive relationships that are much more quickly obvious to normal people. Along with this slowing may go an inability to keep up sustained effort, a tendency to give up quickly and become confused when forced to work at a problem for very long. (Ruesch, 74) In a few cases real personality changes also occur, such as irritability, moodiness, and sometimes violence. Perhaps in a majority of cases mental impairment is only temporary, a real deterioration occurring in a very small minority. Whatever brain damage has occurred has been compensated for by other areas of the brain or by the patient's ability to circumvent those disturbed functions after a period of recovery. This recovery may be fast or slow, depending in part on the extent of brain damage and in part on the personality of the patient. Some patients take their injuries more "seriously" than others.

283. Head injuries involving direct lesions of the brain.

When the skull is fractured and an object pierces the brain, the damage is more likely to be severe than in cases without fracture, although not necessarily so. In these cases we see similar symptoms to those found in other head injuries. In many cases there is no extensive lesion, but only minor hemorrhaging, and the patient recovers without observable psychological loss or change. When there is an extensive brain injury, specific symptoms depend in part on the loca-

tion of the lesion. For example, there can be motor disturbances and aphasic symptoms. In addition we may find the patient undergoing the definite psychological losses mentioned above plus personality changes. He may show signs of irritability, depression, and lack of initiative, for example, where he has not shown such changes previously. There is some feeling that personality changes represent the patient's attempt to ignore or compensate for any mental impairment or deterioration that has occurred. Goldstein (31) emphasizes that brain-injury patients do not show specific results of particular lesions alone. Rather the personality as a whole is involved and changes in behavior (symptoms) are expressions "...of the struggle of the changed organism to cope with the defect, and to meet the demands of a milieu with which it is no longer equipped to deal." (p. 69) Especially noticeable among the special symptoms is a loss in what Goldstein calls the ability to assume an abstract attitude. If the subject is dealing with concrete tasks such as naming colors, he may work fairly effectively if not too hurried. But if he must classify these colors, or sort out geometrical forms that have something in common, he may suffer real difficulty. Under such testing he may also show the symptoms mentioned above of lack of initiative and easy fatigability. (Conkey, 9)

The more extensive the brain damage the longer we would expect the recovery time. Recovery is not dependent on extent alone, however, but on location and other variables such as previous history of the patient. There may, of course, be permanent disability in brain injury cases. Psychotherapy is always important to help the patient adjust to his loss and to attempt retraining in lost functions for which he shows no compensation.

284. Disturbances of the frontal areas of the brain. Lesions of any portion of the cerebral cortex may have psychological concomitants. In previous chapters we have seen how this may be true in such disorders as blindness and deafness due to total destruction of the visual and auditory areas of the cortex; we have also observed aphasias as the result of lesions in the speech area and our last article dealt with head injuries in general. There is a specific region in which lesions

have significant psychological effects. This is the very front part of the cerebrum in front of what is known as the fissure of Rolando. This frontal and prefrontal portion is important in processes requiring much associative activity and abstraction. Thus much of what we know as intelligence must in all likelihood be mediated by this region. When the frontal and prefrontal areas are destroyed, ability to associate the elements of a situation is quite limited, and judgment is poor. The patient is also under a definite handicap in the use of abstract behavior; he is bound to the more nearly concrete.

There have been surgical operations performed which have destroyed parts or all of the frontal region. One of these operations is called *prefrontal lobotomy*. After the skull has been opened an instrument is pressed gently through the cerebral cortex (the gray matter) without real damage to it. The instrument then enters the underlying white matter, composed largely of associative or connecting fibers. In this position, a knife that has been previously hidden in the instrument is pushed out. When it is rotated, it cuts the white fibers between the frontal areas of the cortex and underlying thalamus (a part of the lower brain). Thus the cortex is left relatively intact but deprived of many associative connections. (Morgan, 61) The second operation, much more severe in its consequences than the first, is called *prefrontal lobectomy*. In this case the gray matter of the cerebral cortex itself is taken out completely.

One might suspect that such drastic surgery would leave the patient hopelessly deteriorated mentally, but such is not the case. He can still move around in society with some efficiency. But a close look at him reveals that he is seriously handicapped. He may have trouble planning his daily business, because one of the functions lost is the ability to think in terms of the future. He will also be unable to use symbolic behavior and abstractions effectively. Goldstein speaks of this as the loss of the "categorical attitude," or the abstract attitude that we referred to previously, and considers it as a quite fundamental change in the whole personality structure. While Goldstein's reasoning is not universally accepted, the serious student will find his works most stimulating and provocative. There are many claims that especially prefrontal

lobotomy is effective in relieving neurotic patients of some of their symptoms of anxiety. Such might be expected since anxiety depends upon the ability to think in terms of the future and associate the present and past with it. It is this sort of expectancy that is not possible with the lobotomy patient. Of course, he pays a high price for his relief from neurotic symptoms, but in some instances the relief is considered worth the price. (Freeman & Watts, 25, 26) As a psychotherapeutic measure, there is real promise in prefrontal lobotomy for some severe cases.

LXVII. ABNORMALITIES ASSOCIATED WITH OLD AGE

In this section we shall consider two disorders that depend on physiological and psychological changes occurring primarily after the age of sixty. These are senile dementia and arteriosclerosis. Problems of the normal old person are receiving more and more attention in the psychological and psychiatric literature. We are learning that there are changes in vitality and some aspects of intelligence that are normal for most of us as we grow older. We should familiarize ourselves with such studies so that we may better prepare ourselves for senescence and also so that we may understand older people. Kaplan's book and Berrien's chapter on old age give good summaries. (43, 7) In this section, however, we shall have to limit ourselves to two of the definite abnormalities of old age that accompany certain organic changes.

285. Senile dementia. In Chapter IV we discussed the changes in intelligence that take place in senile dementia. We saw that memory suffered the greatest deterioration, especially memory for recent events, although remote memories are also lost in the senile patient. We attributed these changes as due to and compensations for modifications of the structure of the brain, but we did not specify the nature of the brain pathology. Shock (81, p. 53) summarizes the physiological changes in old age as follows:

The mechanism of impairment of mental function in the aged is regarded as due to interference with the normal metabolic processes within the individual cells, and the breakdown of co-ordinating mechanisms of impairment of mental functions are thus regarded as basically the same as those involved in the impairment of kidney, gastric, or liver function in the aged individual.¹

We are dealing then with general metabolic changes in

¹ Quoted by permission.

old age disorders and not with only the brain changes. But most important in senile dementia are the tissues of the brain, primarily the cerebral cortex which shows atrophy and degeneration of the tissues. This means that there are likely to be soft spots in the brain and a noticeable shrinking, with characteristic cell structures appearing which can be identified at autopsy through staining cross sections of the brain. (Rothschild, 73)

In addition to the senile deterioration, other personality changes are likely to occur, but they take place so slowly that it is difficult to notice them until they are well advanced, unless there has been some precipitating event such as disease, injury, or emotional stress. Some become agitated, restless, and hard to get along with, and there may be some periods of delirium. Others develop delusions, somewhat systematized, but still rather loosely held together. Persecution and grandeur both appear, and the person's background has much to do with the content of his delusions. The senile dementia may really emphasize delusional tendencies already present. Hallucinations occur also, especially along with the delusions and frequently help the patient to explain his delusions. While the thought processes of the senile dementia patient are not the same as those of the child, his lack of mature intelligence and his delusional stories often give the impression of childishness, in the early stages. In the later ones there is such confusion, poor judgment, disorientation, and paramnesia that the patient is readily recognized as demented and perhaps psychotic and must be constantly cared for.

286. Cerebral arteriosclerosis. The primary organic background in senile dementia is a softening of brain tissue; in cerebral arteriosclerosis, the blood vessels supplying the brain are involved rather than the brain tissue itself. There is a hardening of arteries and capillaries with resulting hemorrhaging. Both senile dementia and cerebral arteriosclerosis may appear, and often do, in the same patient. Instead of a gradual onset as in senile dementia, the arteriosclerotic symptoms may begin quite suddenly; sometimes we call one of these attacks when it takes an apoplectic form a "stroke."

Headaches, restlessness, and dizziness are common physical complaints. Mentally the arteriosclerotic patient feels let down, confused, and indecisive. He may have better judgment than the senile dementia patient, but he is forgetful and emotionally unstable. Because there is some insight and occasional "lucid" intervals, relatives and friends sometimes hold out hopes of recovery for cerebral arteriosclerotic patients, but such hope is ill founded.

We don't know why some old people develop these abnormalities and others do not. There does not seem to be any quantitative relation between the amount of cerebral or vascular damage and the mental symptoms; hence we cannot attribute the mental symptoms directly to the organic damage. Rothschild (73, p. 236) says on this point:

When anatomic changes are scrutinized without preconceived ideas as to their significance, it becomes evident that they are but one element in the total picture and that factors of a more personal nature are of etiologic importance in some cases. Too exclusive preoccupation with the cerebral pathology has led to a tendency to forget that the changes are occurring in living, mentally functioning persons who may react to a given situation, including an organic one, in various ways. The same damage which produces a psychosis in one case may not do so in another. Evidently, different persons vary greatly in their ability to withstand cerebral damage, so that the factor of individual mental vulnerability must be taken into consideration. Thus, anything which lowers a person's mental resistance may be of significance in the causation of the psychosis. This opens up many fields for study, for example, unfavorable hereditary or constitutional tendencies, and unfavorable personality characteristics or situational stress.¹

By way of treatment not much can be done for these irreversible disorders except to relieve any symptoms caused by other disorders and to keep the patient as healthy and hygienically sound as possible. Sometimes occupational therapy is beneficial; at least the patient should be encouraged to remain active as long as he is physically able.

LXVIII. GENERAL PARESIS

We found it convenient to discuss this mental disease associated with syphilis of the brain in Chapter IV, since one of the marked characteristics of the paretic patient is his loss of efficiency in intelligent behavior. He is deteriorated, dis-

¹ Quoted by permission.

oriented, especially in time relations, suffers memory disturbances, and has difficulty in number relations.

These are not the only changes evident in the paretic's behavior, for he also exhibits marked personality alterations. He becomes excitable and irritable and disregards custom and moral demands, often embarrassing those around him without realizing he is doing so. He dresses queerly and is generally slovenly, untidy, and often dirty. His lack of judgment may make him gullible, and he may make friends with generally-considered undesirable companions.

Emotional outbursts are not uncommon, and there may be little consistency in emotional moods. Laughter and tears may alternate without apparent cause. In regard to the emotional disturbances of paretics, it has been pointed out that they often not only suffer from cerebral syphilis but also from disorders of a psychogenic origin. (Schube, 78; Kenyon, Rapaport, and Lozoff, 45) At least in many cases emotional indifference develops along with the more noticeable memory defect. In some cases, however, either a euphoric or melancholic affect may be seen. Some patients are expansive, having bizarre delusions about personal achievement, the possession of millions of dollars, and the like. Others are severely depressed, with melancholic delusions and many imagined bodily ills and disorders.

In addition to the psychological characteristics of the paretic, there are others. Motor incoordination is marked, showing up in abnormal reflexes, epileptiform or apoplectiform convulsions, speech tremors and thickness, and writing incoordination.

In recent years great strides have been taken in the understanding of this disease and in the development of methods for combating it. The most recent and most promising procedure is to increase the bodily temperature of the patient by various devices. It has been found that the specific organism of syphilis cannot survive when the bodily temperature is increased above a certain point and, even in advanced cases, complete elimination of the organism, through raising the body temperature, has been reported. The increase in temperature may be accomplished by inducing in the patient febrile diseases, such as malaria, by the application of hot

pads, or by passing electric currents of high frequency through the body of the patient. The electric treatment is the most recent and seems to be the most effective.

Until the development of the heat treatments for syphilis, general paresis presented an unpromising problem. The deterioration ran its course in a few years and the patient died. Now the process may be completely arrested, and, while the destroyed cerebral tissue cannot be restored, future destruction is prevented. Patients, thus cured of progressive deterioration, may live for years usually at the mental level of inferiority determined by the degree of disintegration attained before treatment. Some have reported that fever treatment seems not only to stop the progress of the disease but to provide some improvement in such functions as motor coordination, retention, immediate recall, and even intelligence as reflected in test scores. Much of this improvement is likely due to learning and increased cooperation. (Landis and Rechetnik, 50; Dubois, Mays, and Landis, 7)

When it becomes thoroughly and universally understood that syphilis is a medical problem that can be combated by proper therapeutic methods, and when such treatment is substituted for the useless moralizing that has been widespread in the past, it seems certain that this potent cause of mental deterioration may become relatively rare.

LXIX. EPILEPSY

By derivation, the term *epilepsy* means "seized upon," a definition that has stemmed from the old conception of the disease as a "seizure" of the patient by some malignant spirit. This conception of the epileptic fit as a seizure has long since been discarded. The name is now applied to disorders characterized by recurrent episodes of the sort to be described.

287. **Grand mal.** The typical epileptic fit. The episodes that characterize epilepsy are quite varied and may not be patterned exactly according to the outline below, but in well developed forms, which are called *grand mal* attacks, the sequence of events is somewhat as follows:

1. *Preliminary signs.* Most epileptics have signs that they themselves sometimes recognize as the precursors of a fit. Sometimes their friends are able to discern the indications

of an oncoming episode. In the older literature on epilepsy these signs were called the *aura*, a term reminiscent of the older conception of the disorder as a "seizure." In those times, *aura* meant a sort of vapor—literally, it is an emanation—which was supposed to proceed from the individual to indicate the presence of the spirit who was about to take possession of him. The term is now used as a synonym for "warning."

These preliminary signs are quite varied. The patient may see flashes of light (photomata), may hear buzzings (akoasms), may have a feeling of giddiness, or queer convulsive reactions of the viscera. He may be filled with fear or ecstasy, may become very alert in his thought processes, highly imaginative, or strangely drowsy. He may tremble, parts of the body may jerk, or he may run about in circles.

These preliminary activities, while extremely varied, as the above enumeration indicates, are fairly constant for each individual. For example, one woman could tell for some time in advance that her husband was going to have a fit because of a change in his mood, which began very gradually but continued until he became quite irritable. She could indicate by the pitch of irritability just about when to expect the break.

2. *The tonic stage.* The *aura* is followed by a tonic contraction of all the muscles of the body. The beginning of this tonic stage may produce a peculiar scream in the following manner. Since the muscles concerned with expiration are stronger than those of inspiration and since those that close the glottis are stronger than their antagonistic muscles, the glottis is reduced to a slit and the air is forcibly expelled as the state of tonus is increased. This produces the classical epileptic scream. With the complete development of the tonic stage the patient drops like a log with no regard for danger, and with total loss of consciousness. In some cases this may lead to severe injury. One woman came to the hospital all burned and scarred. She had reached over a hot stove just as the fit came upon her and had fallen upon it. Others will fall down steps, will bump their heads on hard projecting objects, and otherwise injure themselves.

The tonic stage lasts from less than one to two minutes.

3. *The clonic stage.* A clonic convulsion is an alternate contraction and relaxation of the musculature. When this stage supersedes the tonic one, the patient thrashes about in a very marked manner, with rhythmic contraction and relaxation which has some particular effects that should be noticed. The convulsion whips the saliva into a foam by movements of the tongue combined with the vigorous mouth breathing. In addition to this, the clonic movements of the jaws may cause the patient to bite his tongue. One can safeguard against such injury by placing a soft object, such as an ordinary eraser, between the teeth.

There is nothing that can be done to hasten the end of the attack. One can simply take care of the patient to prevent his injury of himself or damage to his surroundings. The clonic stage lasts but a few minutes.

4. *The period of coma.* The clonic stage is likely to pass into that of coma, or deep sleep, which may vary in length from several minutes to several hours. After awaking from his sleep, the patient usually feels very much worn out and "used up," a thing that would be expected from such violent activity.

5. *Incidence of grand mal and petit mal attacks.* Perhaps a large majority of patients who have any kind of epilepsy have grand mal attacks at some time. But in one study by Lennox (51) of the total number of attacks of any kind surveyed, only 26 per cent were grand mal and 71 per cent were petit mal (to be discussed in the next article). Likewise grand mal attacks are not likely to occur as often as petit mal; the average number of grand mal attacks for each patient in one year was 114, and the average number of petit mal was 573. This average for grand mal is made higher than it otherwise would be because a few patients have as many as 1000 or more attacks a year, but 75 per cent of them have less than 50 attacks a year.

In regard to age at onset Lennox (51) says that the first two years of life and adolescence are the most important. Petit mal attacks tend to decrease with years in adulthood.

288. **Petit mal. Minor epileptic episodes.** In many cases, attacks that are presumably epileptic in nature do not follow

the full course outlined above. These minor attacks have been called *petit mal*.

In these forms there may be minor motor disturbances and some dizziness with perhaps momentary loss of consciousness, but the subject seldom falls or goes through the other phases of the major grand mal episode.

The following incident illustrates the transient nature of a *petit mal* attack. One day as the author entered a bakery, another customer going out passed him at the door. As the author approached the counter, the woman attending the store rose from a chair with a bewildered sort of expression. She looked at her hand and said, "How did I do that, I wonder." Her hand was bleeding. She then related that she had just waited on the customer who had left, had felt rather dizzy, and had sat down. She had not the slightest notion how she had cut her hand. All this had happened in the brief space of time it took for one customer to go from the counter to the door and for the other customer to walk from the door to the counter. The loss of consciousness was not marked enough to cause her to fall over, for she sat down in her chair as a result of feeling faint and dizzy. Being cut without knowing it indicated a true momentary lapse of consciousness, and the woman was known to suffer with these "spells."

289. **Epileptic equivalents or psychic epilepsy.** There are individuals who have recurrent episodes which do not involve any loss of consciousness, which do not involve any fit in the real sense of that term, but which, because of their recurrent nature and because they occur in those who are known to have epilepsy, have been called *epileptic equivalents*. We shall describe some of the most important of these.

1. *Attacks of irritability.* The individual recurrently becomes very ill-humored, fault-finding, and irritable. This irritability occurs in spite of the fact that external affairs have been moving in their normal channels. The friends of one subject to these spells learn to expect them and stay away from him or smooth things over until the spell is past. Such a spell may be precipitated either by an organic irritation or by some mental irritation that the individual has been

trying to ignore. Everybody has experienced for himself some irritating skin lesion that he cannot relieve, trying to be cheerful for a time and hiding from his friends the fact that the irritation is present, but, finally, at some trivial occurrence, he will express his irritation in an unreasonable reaction. A similar thing may happen when one is trying to ignore some minor brain or even mental irritant. This is probably the explanation of epileptic spells of irritability.

2. *Spells of furor.* Some individuals have recurrent attacks of great excitement during which they may commit acts of violence, brutality, and even homicide. Such attacks, as epileptic equivalents, are precipitated by trivial events. For example, a man who was known to have epilepsy was one day up in a tree picking cherries. A neighbor came along and yelled in fun, "Hey, come down out of there." The man came down in a hurry, grabbed a club, and chased the man who had called to him. He was so angry that he probably would have done the man bodily violence had he caught him.

3. *Epileptic delirium.* An epileptic delirium may precede an actual fit, follow it, or take the place of it. In such a delirium the subject has a clouding of consciousness. He wanders about in an automatic way and may engage in all sorts of vicious activity because he lacks the control which normal persons exercise in their contacts with life. After the delirium he usually has a complete amnesia for what occurred during it.

A boy who was subject to epileptic deliria was brought into our clinic with the complaint that he often wandered away at night and had been caught in several burglaries. It was discovered that he had no recollection of what happened on these trips. Several times he had been found fast asleep in some factory into which he had broken. At one time he had been traced and found sitting propped against a tree along the lake shore. He had been taken home and put to bed, but the next morning had totally forgotten the whole episode, including the trip home.

290. *Electroencephalography.* In the last two decades we have become aware of the existence and diagnostic usefulness of the electrical activity of the brain, particularly the cerebral cortex. The study of the "brain waves" produced by these

electrical rhythms is called *electroencephalography*, often abbreviated to *EEG*. These waves are obtained by attaching small electrodes to the scalp by means of an electrode paste which secures them there without discomfort.¹ These electrodes measure the changes in electrical potential occurring in the area of the brain between the two positions of the electrodes. Suitable amplifiers magnify these changes in potential about a million times so that they can be seen in the back and forth movements of a small pen activated by the amplifier. The pen marks a moving tape and thus leaves a wavy tracing. More than one kind of brain wave is so produced, but the most common one is the *alpha* wave which is fairly regular and occurs from eight to thirteen times every second, with a very small voltage. These wave patterns are not the same from individual to individual although they are similar enough for the experienced eye to distinguish a "normal" *EEG*; each person tends to have the same kind of pattern each time he is tested, much as his voice or way of walking is the same from day to day (although not exactly identical). There is some evidence that heredity plays an important part in the kind of electroencephalogram a person exhibits. (Davis and Davis, 14; Lennox, Gibbs, and Gibbs, 54)

Brain-wave tracings can be taken from the entire area of the brain or from certain portions. In epilepsy often the abnormal waves come from the cortex as a whole, in others from focal regions primarily, with perhaps a spreading from them. Electroencephalography is an aid in determining the area in which there is some brain pathology such as a lesion or a tumor. In epilepsy these frequently play an important part.

1. *Petit mal attacks are accompanied by slow waves and spikes.* During an epileptic attack the electroencephalograms of patients show characteristic changes which are associated with abnormality. In petit mal attacks the alpha waves slow down to a frequency of around three per second (sometimes any wave of less than eight per second is called a *delta* wave or simply a slow wave). In addition to the slowing down the

¹ Electrograms can be obtained also by direct contact of the electrodes with the brain itself.

waves usually show an increase in amplitude, reflecting a rise in voltage and often a peculiar spike formation with each slow wave. These spikes seem to occur just as there is a muscular twitch somewhere.

2. *Grand mal attacks are accompanied by very fast, high-voltage waves.* The waves that occur during a grand mal seizure point up the real commotion taking place. They are fast, irregular, and of higher voltage than normal; they occur about fifteen to twenty-five times per second (as compared with the normal eight to thirteen) with an average of ten. (Lindsley, 55) These waves represent a paroxysmal cerebral dysrhythmia; that is, the usual rhythm is definitely broken and the cerebral electrical activity comes in rather explosive bursts.

3. *Either brain-wave pattern may appear in the absence of clinical signs.* One of the most valuable uses of electroencephalography is to discover patients who do not show the visible signs of epilepsy but whose brain-wave patterns show that they have *subclinical seizures*. Often they report momentary flashes of symptoms but no further indication. Many epileptics have these brain-wave patterns between visible seizures, indicating that they are not free from subclinical attacks even when they appear normal. No doubt much of the hesitation and so-called irritability of epileptics can be accounted for by these cerebral dysrhythmias which do not carry over into overt symptoms. This is also possible with many problem children who show these cerebral signs in the absence of any noticeable epileptic seizures. (Lindsley, 55) It has been estimated (Lennox, Gibbs, and Gibbs, 54) that about 10 per cent of the normal population show cerebral dysrhythmias without any clinical signs. It may be that these are potential epileptics who have not had either organic or emotional cause for more drastic symptoms. That such dysrhythmias travel in families is evidence in this direction.

291. **Idiopathic and symptomatic epilepsy.** The exact cause of epilepsy is still unknown, but that cerebral pathology is involved is now almost taken for granted. The *EEG* studies have helped to corroborate this supposition. In many cases no lesion, tumor, infection, or the like can be found, but the

person suffers from a species of biological failure and manifests recurring episodes as an essential part of his physiological reaction system. While precipitating factors, such as strong emotions, may play a predominant role in such cases, there is an essential background of weakness, the origin of which is not clear. When such a biological weakness seems to predominate in individuals subject to recurrent convulsions, the condition has been called *idiopathic epilepsy*.

Symptomatic epilepsy is so called because it is symptomatic of some brain injury or malfunction of the body such as kidney or gland disease. Even in these cases it may be that the injury is superimposed on the background of susceptibility.

292. **Personality and intelligence of epileptics.** There is no agreement on whether there is an epileptic personality and whether the personality characteristics precede or follow the epilepsy. In an earlier edition of this textbook it was proposed that the epileptic episode is an expression of an underlying personality disorder, that epileptic patients were abnormal before the attacks. In a sense this is true; that is, there may be cerebral dysrhythmias which do not burst forth into petit mal or grand mal attacks. But the notion that there is no cerebral background for epilepsy will have to be modified as a result of the *EEG* studies. It is quite likely that the personality characteristics that are usually given for epileptics are the result of the irritability of the cortex and of the patient's psychological reactions to the fact that he has epilepsy. (Arluck, 4) Lennox (53) summarizes many studies of the personality of epileptics by implying that such studies have not been adequately controlled. In the first place, many studies and clinical observations have shown that not all or even a majority of epileptics display the stigma assigned to epileptic personality. In the second place, many children have not shown these characteristics until after the seizures have also appeared. Third, the normal population has not been adequately studied for incidence of these traits under psychological stresses similar to those the epileptic must bear. Finally, these stresses themselves could be responsible for some consistency in the personality characteristics found. When we stop to think of the public attitude toward epilep-

tics it is no wonder they become irritable and egocentric. Add to this their reactions to themselves, never knowing when they will suffer an attack and its accompanying embarrassment, and having the feeling that they are so very different from other people. These reactions coupled with the cerebral dysrhythmia make more understandable the hypersensitivity, impulsiveness, extremes of like and dislike, and overreaction to stimuli which often appear in epileptics.

Intellectually there is no reason to expect that epileptics as a group will suffer. Older studies on institution groups left the impression that there was definite impairment among epileptics, but at least 50 per cent probably do not deteriorate. (Lennox, 51) This might well have been due to the fact that patients in institutions were there for the mental defect as well as the epilepsy. Congenital defects can contribute to both epilepsy and mental deficiency. Also brain injury before the epilepsy could be responsible. Nevertheless some cases of epilepsy of long duration, especially those with frequent grand mal seizures, show some evidence of deterioration, although few really well-controlled follow-up studies using standardized tests have been made. Many cases of petit mal seizures show no deterioration at all. Some claims have also been made that bromide therapy causes intellectual deterioration, but the studies of Yacorzynski and Arieff (94) and Arieff and Yacorzynski (3) indicate that there is no significant deterioration in patients in whom no definite organic disorders such as cranio-cerebral trauma, tumor, bacterial and inflammatory disease can be found.

293. Treatment of epilepsy. The cause for epilepsy is very difficult to treat primarily because it may not be known. If there is a tumor, lesion, or some such disorder, surgery may prove useful. In other cases general habits and routines of living may need to be toned up. Specific drugs used to control epilepsy include (a) bromides, (b) phenobarbitol, and (c) a newer drug, dilantin, which gives generally better results, although its use is limited to patients who do not suffer toxic effects from it. In addition to drugs some help has come from acid-producing (ketogenic) diets and a sort of dehydration by the limitation of fluid intake. Since emotional upsets may be the triggers which set off attacks, patients are

encouraged to keep themselves in circumstances not likely to encourage any extra emotional conflicts.

LXX. DISORDERS ASSOCIATED WITH ALCOHOL

Many people drink alcoholic beverages, and they do so for diverse reasons. We should differentiate the so-called social drinker from the pathological drinker. The former uses alcohol much as he uses any other aid to social intercourse while the latter drinks to excess, cannot get along without alcohol gracefully, and may be harmed by the alcohol; i.e., he shows definitely maladjustive or psychotic reactions as a result of drinking. Such behavior is abnormal in the statistical sense since large numbers of people drink without these effects. The following discussion will treat some typical pathological alcoholic reactions and present results of some of the studies of the backgrounds of alcoholics. While we shall describe reaction patterns commonly found in people who drink to excess, our attention should not be distracted to alcoholism itself but should be focused on the alcoholic person.

294. The problem drinker. There are men and women who have periodic drinking sprees that leave them discouraged and unhappy. There are others who drink regularly but not enough to dull their senses and intellect noticeably, but feel "jittery" if they don't have their usual drink at the usual time. Both are problem drinkers whose work may suffer, who are annoyed at little things, and who are showing signs of instability. They may not recognize themselves as alcoholics, however. Durfee (18) gives the example of a physician who had the habit of drinking immediately after a game of golf. Soon he wanted the drink whether he played golf or not and whether he was with friends or not. The drink seemed more important to him than anything else; more was involved than refreshment or conviviality. He was a problem drinker and could easily go from bad to worse, although he would not have considered himself so. Many such drinkers refuse to recognize that there is any problem involved in their alcohol addiction until symptoms become much worse and they are forced to take some action.

295. Chronic alcoholism. After a person has been drinking habitually and more or less uncontrollably for a number of years, certain physical and psychological alterations may be so obvious as to warrant calling him a chronic alcoholic. Physically, he may have serious tremors, present a dull, listless facial expression, suffer from gastric disturbances and

cirrhosis of the liver, and complain of paresthesias. Psychologically, he gives the impression of a person who once could think clearly but no longer finds that worth while and is satisfied to make judgments on the basis of any prevailing mood. The toxic effect of the alcohol has dulled the critical functions of the cortex, and the patient is incapable of making sound judgments. Since he cannot concentrate or remember well either, he becomes very careless and even shiftless, making any kind of continued employment almost impossible. He may not be so deteriorated that he cannot recognize these deficiencies, but he is on the defensive about them to friends and relatives and may be irritable and churlish with them, complaining of his fate and their lack of understanding. While psychotic symptoms do not predominate in chronic alcoholism, the chronic alcoholic is in a serious condition and needs immediate help. Moral preachments alone are seldom to any avail.

296. Delirium tremens. Chronic alcoholism develops gradually, and the signs of personality and intellectual disturbances come on insidiously. Some patients develop a set of dramatic symptoms after a prolonged drinking spree, prominent among which are tremors, primarily of the face, tongue, and fingers (although convulsions may appear), and a delirious condition. These symptoms seem to occur in otherwise healthy people who have prided themselves on being able to "hold their liquor"; actually, of course, they can hold it only to a certain point, after which the toxic effects break forth in full fury. Visual hallucinations disturb them no end; they see distasteful objects including rats, insects, snakes, dogs, and even pink (or any colored) elephants. In addition there may be cutaneous hallucinations of snakes or bugs crawling over the skin. (cf. Chapter XI) To add insult to injury the patient is often dreadfully afraid of these hallucinated objects. During the delirium we might expect the patients to be disoriented for both time and space, and this is what we find. The hospital may be mistaken for a police court, a night club, the patient's home, or almost any spot that has some predominant significance to the patient at the time. He is not likely to know what time it is or even what year it is. He gives a picture of being thoroughly confused, and he is;

even his memory serves him badly so far as recent events are concerned, and he has great trouble in learning new things. After four or five days the delirious effects seem to spend themselves, and the patient may be tired and want to sleep. The tremors may remain a little longer, but they, too, soon clear up, and the patient may resolve never to let himself get so drunk again. Seldom is he able to keep his resolution, however, and another bout occurs sometime later. Disease or injury seem to be important precipitating causes for some of these sprees, especially when they occur in chronic alcoholics.

297. **Korsakoff's psychosis.** In chronic alcoholics who have previously shown no marked psychotic symptoms the Korsakoff's syndrome may appear rather suddenly, especially after the age of fifty. That it is not purely due to alcohol is shown by its appearance also in cases of toxic effects of lead poisoning, typhoid fever, and cerebral arteriosclerosis (hardening of the arteries). The most prominent symptom is the memory disturbance. One patient, for example, wanted to take a bath immediately after having dressed from a bath, asked why a good friend did not come to visit her just after the friend had left her room, said that her room would not need straightening and dusting that day (an attendant had just helped her do so), frequently took her physician for a total stranger, and otherwise mixed up events and people. Such patients' remembering is characterized by retrospective falsification and confabulation. (cf. Chapter VIII) The confabulations occasionally may be made more real by hallucinations, particularly those that will help the patient to visualize himself as doing some of the things he talks about. Very often we find, in the physical symptomatology, polyneuritis (inflammation of the nerve trunks) which leads to tenderness over the nerves and some pain and hyperesthesias. But such inflammation is not an explanation for the clinical signs, nor is any known damage to the cerebral cortex. (Jellinek, 42) The alcoholic Korsakoff psychotic may show mental improvement after about two months, but there may not be any permanent cure or improvement to his former level of efficiency. There is much research now on the use of vitamins in relieving the physical symptoms of this and all the alco-

holic disturbances, since there is some evidence that there are nutritional deficiencies accompanying alcoholism. (Jellinek, 42)

298. **Other alcoholic psychoses.** We have already mentioned in Chapter VI that hallucinations may appear in long-confirmed inebriates and that their reactions are psychotic in nature. Likewise certain paranoid states may be found in drinkers of long standing. There is some question as to whether the changes in the brain that may occur as a result of so much alcoholic consumption may cause these psychotic manifestations or whether there has been a personality development toward a psychosis such as schizophrenia, and the drinking makes it finally appear. Other factors that might help to predispose to the psychotic reaction might be nutritional imbalance or some kind of injury to which the alcoholism was added. It is quite likely that the previous personality development of the alcoholic has much to do with whether or not he will show these psychotic reactions, and with their severity.

299. **Common factors in the personalities of alcoholic addicts.** We do not know just what causes alcoholism, except that there must be a multiplicity of causes and that the constellation of them in any one person is very important. Vitamin deficiency, pathological craving, and allergy have been proposed as physiological causes of alcoholism, and each may be important, not so much as a cause as a contribution to the strengthening of the habit. Environment, such as poverty, improper recreation, and the attitude of the public have been advanced as causes, but no one of them necessarily leads to alcoholic addiction, and no one of them has been found consistently in alcoholics, although again each might be important in an individual case. Superficial descriptions of the goal the alcoholic is seeking have also been proposed as causes, such as escape, giving a lift to the ego, making one less withdrawn and more socially at ease, enabling one to give free rein to the imagination, but all of these can be achieved in other ways than alcoholic addiction, even though in certain cases they have played an important role. Already we can see that there are several groups of causes operating in any given case. Much of our difficulty in ferreting out caus-

ation has come from the variety of alcoholics who have been studied without sufficient information as to what sort of difficulty they are suffering from. We cannot justifiably compare on an equal basis studies made on the alcoholic psychoses with those based on the problem drinker. In addition many of the studies have been of an uncontrolled clinical type in which the reporter's prejudiced eye has seen more or less what he has been looking for.

One way of trying to integrate all these causes has been the study of the common characteristics found in the personalities of chronic alcoholics, wherever these might have come from—environment, heredity, occupations, or physiological tolerance. Many of these studies have been highly impressionistic, while others have been based on careful observation of the cases seen by a clinician or group of clinicians. In one such study Davidoff and Whitaker (12) gave a list of the common characteristics of their group of chronic alcoholics. Included were poor reaction to change of state of one's affairs, immature sexuality, marital difficulties, psychopathic or psychoneurotic traits, and narcissism. General emotional and sexual immaturity and narcissism appear in many lists of personality characteristics of alcoholics. One of the most carefully done studies of the subject has been made by Wittman. (92, 93) She has pointed out that alcoholics are not actually homogeneous, but that the most common personality characteristics include emotional and mood instability, an ego-centric attitude, swings of mood, little shyness, and a definite suspicious, paranoid tendency with conceit and scorn for the ideas of others. From their own responses to an elaborate questionnaire, she found that alcoholics had the following developmental and personality characteristics:

1. A domineering but idealized mother and a stern, autocratic father whom the patient feared somewhat as a child.
2. A marked degree of strict, unquestioning obedience demanded in family life, with little latitude and freedom allowed.
3. A feeling of insecurity as evidenced by an insistent feeling of need for religious security and a strong feeling of sin and guilt.
4. Marked interest in the opposite sex, with many love affairs but poor marital adjustment.
5. Lack of self-consciousness, together with a marked ability to get along and be socially acceptable to others.

6. A keyed-up emotional level, resulting in work done under high nervous tension.

7. A definitely expressed and disproportionately greater love for the maternal parent than for the paternal.

It should be emphasized that Wittman did not include either psychotics or social drinkers in her study; it was made on the basis of chronic alcoholics. We do not know just how to evaluate the studies on the personalities of alcoholics since many of the traits and developmental characteristics are applicable to other than alcoholic groups, and we are not sure as to the homogeneity of alcoholics anyway. But given an alcoholic it pays to look for these signs in attempting to proceed with psychotherapy.

300. Treatment of alcoholism. When the inebriety is symptomatic of one of the primary personality disorders or psychoses, the most logical treatment would concern itself with the basic difficulty, of course. But even where this is possible we still have a large number of alcoholics who require treatment to rid them of the alcoholic addiction. One of the first things we must recognize is that the treatment needs to be medical and psychological rather than merely moralistic or punitive. Such measures have been tried for years or even centuries without appreciable results. It is too bad that we cannot say that the use of drugs and psychotherapy has materially changed that picture, but the outlook for chronic alcoholics and alcoholic psychotics is not too promising. (Jellinek, 42) Many temporary and partial cures can be found reported, but permanent ones are not in the majority. One reason for this is that the alcoholic wants to be normal, but normal in the sense that he can drink normally, refusing to face a life without *any* alcohol. He is not in the position of the person with a disease which he would like to have run its course and be done with; his problem is too deeply imbedded in his personality. And its treatment through psychotherapeutic means is very difficult, too, because of the egocentric, uncommunicative attitude of many alcoholics. They are not able to establish a rapport with anyone who might help them get rid of the addiction which is so important to them. Many of the favorable changes that do take place occur when the patient and clinician establish

sufficient rapport to explore the entire personality and where a change of environment is tolerated as a part of a major therapeutic program. (Durfee, 18)

Two therapeutic measures have had some prominence recently, in addition to the counseling-interviewing type of psychotherapy:

1. *Alcoholics Anonymous*. Alcoholics Anonymous is an organization of several thousand former alcoholics who have banded together to help other addicts cure themselves of the alcoholic disease. It rests on the assumption that if a person really wants to be cured of his disorder, there is hope for him. There are at least two main aspects to the treatment. First, the alcoholic is visited by one or more former drinkers who have quit drinking. With these people he has something in common and a more immediate rapport can be established than would otherwise be possible. Here is an individual who really knows what it is like to crave drink, and what is more, he has successfully combated the urge. The importance of getting under the skin of the alcoholic, so to speak, in this way cannot be overemphasized. One of the chief drawbacks to psychotherapy as practiced by clinicians has been the inability to get the alcoholic to feel he is accepted and understood by the clinician. In the second place, a positive program of belief in the possibility of recovery is instituted. This belief is not placed in the alcoholic himself; he has tried trusting himself and relying on resolutions and will power before, to no avail. The trust must be placed in a higher power, one outside the alcoholic himself, such as God as interpreted by the alcoholic. A sort of religious conversion takes place, usually without the emotionalism many have come to associate with religious conversion, but more like the change in personality that takes place with genuine emotional re-education or achievement of insight into one's own emotional conflicts. Tiebout (86) suggests, in fact, that such faith in someone or some power bigger than oneself forces the alcoholic to abandon his narcissistic, egocentric attitudes which have been in part responsible for his immaturity and emotional need for the alcohol. Alcoholics Anonymous stress that alcoholism is a disease and may need medical treatment, too, but they feel that the emotional conflicts are of sufficient

importance that purely physical or physiological treatments are not likely to be enough. Few, if any, workers with alcoholics fail to say a good word for the work of Alcoholics Anonymous, although their service may not be applicable to many patients. Silkworth (82) presents endorsements of their work from many prominent physicians who are experienced in the field and have seen them operate.

2. *The conditioned reaction treatment.* This method depends for its efficacy on conditioning the stimulus of alcohol to the response of nausea. Typically the patient is hospitalized for a series of conditioning "trials," which must be very carefully and rigidly carried out so that all precautions are taken for proper conditioning. He may have no breakfast and is given a strong emetic before being placed at a table with his favorite liquors. He is encouraged to smell and sip slowly the whiskey, but shortly after he starts he is seized with a strong reaction of nausea and vomiting. This process is repeated a number of times—perhaps four to eight (Carter, 10)—even though the patient may offer strong resistance and have to be urged. Separate treatments may have to be given for gin and wines. Every few months patients need to return for a booster, or reinforcement aversion treatment; many do not do so and may lose the benefits of the original treatment; this is not the only reason the conditioned reaction treatment may not be effective. It is obviously symptom treatment and can effect a cure only when the patient has strong possibilities for a stable adjustment without alcohol. This means a careful selection of patients who can profit from the aversion treatment without assuming other symptoms just as destructive to the personality.

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CHAPTER XIV

PSYCHONEUROSES

Of the troublesome personality disorders the student is likely to come into direct contact with, a large number will be psychoneurotic. The term *neurotic* has attained great vogue in the past decade and is often loosely used to mean any kind of abnormality. We shall want to restrict its use somewhat and then look at the constellations of psychoneurotic behavior which have been given special names.

301. Normal, psychoneurotic, and psychotic behavior. We have already emphasized that the abnormal person differs from the normal in degree rather than in kind. This emphasis implies that there are times when it is difficult to decide whether a person on the borderline belongs in the normal or the abnormal classification. Since some have referred to the psychoneuroses as benign or mild and the psychoses as more severe behavior disorders, we might also think that there are three degrees: normal, psychoneurotic, and psychotic. In a sense this is correct; in the sense that the degree of abnormality is roughly in that order. But we must not jump to the further conclusion that one shades off into the other in the order given. A psychosis does not necessarily develop from a psychoneurosis, although it might do so; i.e., psychoneurotic behavior may characterize an individual for a time, and later he may exhibit symptoms that are more characteristic of psychosis. But in many instances the behavior pattern is from the beginning more psychotic in nature than psychoneurotic, so we cannot assume that there is an orderly progression from normal through psychoneurotic to psychotic.

It is not always easy for even a trained individual to differentiate the normal person who is a little bit queer from the one with a mild psychoneurosis. It is relatively easier to tell the full-fledged psychoneurotic from the normal, however, because his behavior is characteristically more specialized in one sort of defensive behavior and because the

psychoneurotic behavior assumes such a prominent position in the person's everyday affairs. Everything else seems to revolve around these symptoms, such as somatic complaints, anxieties, "that tired feeling," compulsions, or obsessions. In spite of their prominence, they do not completely dominate the psychoneurotic's life. He may be fearful and anxious and worried most of the time and yet manage to conceal his troubles enough of the time to live a somewhat controlled life. To put it another way, only a part of his personality seems to be affected. In the psychoses, on the other hand, the entire personality of the individual is changed; he is in a sense almost a different person rather than the same person with some complaints that cause him trouble. These rather general statements are made for the purpose of giving the student some idea of the difference in degree of disorder which characterizes the normal, the psychoneurotic, and the psychotic. There are exceptions, of course, and they will become apparent as these disorders are discussed. Also it will become clear that the particular constellations of behavior as well as the degree help us to differentiate one disorder from another.

302. Common characteristics of the psychoneuroses. As we shall soon see there are several different clinical pictures subsumed under the one term, psychoneurosis. Is this inclusion of different syndromes accidental, or is there really something common in them all, some fundamental principles involved no matter what the clinical picture of the psychoneurosis is? Let us try to formulate a few common characteristics that we may look for.

1. We have already seen that the psychoneurosis is a form of attempted adjustment to a conflict which involves a portion, rather than the whole, of the personality.

2. We also have implied that the psychoneurotic makes responses over and over again that are not consistent with the stimulating circumstances, that seem to be directed more by an internal need than by the motivating situation.

3. A third characteristic of most neuroses is that they have their origin in a series of experiences in the early history of the individual's life; these result in conflicting tendencies which arouse emotional tension and for which the individual

can find no suitable solution. (Malamud, 34) That some psychoneuroses may have their principal origin in later life will not be denied, but those most damaging and difficult to overcome seem to arise not spontaneously but to develop from childhood experiences. This importance of childhood has already been discussed in connection with the development of any personality, whether neurotic or not, in Chapter III. In that chapter we saw that the child had to learn to establish a proper balance between individualization and socialization and between freedom and dependence. If this balance is not found or if the child is thwarted at every turn in striving to achieve it he may react in any one of a number of potentially neurotic ways in the effort to make a suitable adjustment. Likewise we found that family relations relating to affection, jealousy, dominance, and the like had telling effects on the sort of habit patterns the child would find useful in gaining his ends. We cannot review these in detail, but you should refamiliarize yourself with them in order to make this chapter most meaningful. It is possible that sometimes a single traumatic experience, one involving a great emotional tumult and real significance to the individual, might be the chief basis for the development of a psychoneurosis such as a phobia, but it is probably more often true that many experiences, each reinforcing the other, lead to the development of most psychoneuroses.

4. A fourth characteristic of most psychoneuroses has to do with the lack of understanding the patient has of the relation between his childhood experiences and his neurotic syndrome. He may not be aware at all of the cause of his trouble, or, if he is, he does not see how the cause and effect are connected in his own life. He is unconscious of the relationship between his emotional conflicts and the symptoms they give rise to.

5. Malamud (34) has suggested that in addition to positive signs there are some factors absent in psychoneuroses that may be present in other forms of abnormality. For example, there is no organic disorder that is relevant to the symptoms found in the neurosis. There is no intellectual deterioration that lasts over a period of time and is characteristically found as may be true in some psychotic disturbances.

Disturbances of mood and affect, if found in a psychoneurosis, are not primary; rather, whatever the emotion, it is concomitant with the difficulty. And finally the psychoneurotic does not persistently and characteristically deal in delusions and distortions of reality, at least not as his fundamental way of trying to solve his problems.

303. Animal and human neurosis. In Chapter II some remarks were made about the experimental work that has been done with animals in making them exhibit neurotic-like behavior. We found that the behavior itself was not the criterion for neuroticism, but that the behavior, as related to the circumstances under which it occurred in a specific animal, had to be considered before labeling it as neurotic or abnormal. The characteristic formula for making an animal exhibit these neurotic behavior patterns was (a) to train him to expect one kind of result from a certain kind of behavior, (b) to provide the stimulating circumstances for eliciting that behavior, (c) to make it impossible for that behavior to occur or impossible for the animal to judge the situation properly, and (d) then to continue to stimulate the animal toward some kind of response. Of course his response was inadequate and floundering and neurotic, but it probably got him out of the stimulating circumstances that were so distasteful. As a result, the next time he was put in the same situation or maybe even in another situation similar to the original frustrating one, he used the response that got him out the last time—the neurotic one. There is undoubtedly a parallel in the neurotic behavior of human beings; it is much more complex, but the human individual does learn to become neurotic because such behavior, even though not thoroughly efficient and satisfying, does get him out of an even more distasteful situation momentarily.

Now the analysis made of the situations producing animal neurosis suggests largely that the source of the frustration to the animal comes from an external situation. You will remember that in Chapter II we referred to the fact that the human being can also add many frustrations that are of his own making. He develops feelings of guilt, shame, moral inhibitions, and the like which also act as frustrations and barriers. This means that often the human being is fighting

himself rather than the external situation; he is torn with conflicts within his own personality; he must defend himself and at the same time make some kind of response. This defensive kind of response may be labeled neurotic. This chapter will be concerned with some of the forms these neurotic behaviors can assume; it will show how many of the disorders we have referred to in previous chapters may occur in a pattern that is designed to defend the individual adopting them. It will be more understandable if the reader is familiar with the previous material in this book, especially that in Chapter II.

304. Neurosis or psychoneurosis? The title of this chapter is *Psychoneuroses*. In the last article, dealing with animal disorders, the term neurosis was frequently used but not psychoneurosis. The student might well wonder if there is any fundamental difference in the two terms. At one time there supposedly was a difference; neurosis referred to abnormalities of behavior resulting from disorders of the nervous system, usually benign or mild ones as compared with the psychoses; psychoneurosis implied that the behavior was similar but the cause was purely "in the patient's mind." Such a distinction we have found artificial. We must conceive of a person as unitary although he may have difficulties of structure or of function. The psychoneuroses deal largely with disorders of function, and the term neurosis is frequently substituted for the longer psychoneurosis rather than reserving it for the purely nervous disorders. The old distinction has passed out of current usage, and the terms are used interchangeably by most writers.

LXXI. ANXIETY AND ANXIETY NEUROSIS

When a person has a genuine reason for looking toward the future with foreboding, he naturally worries until he has formulated a plan of action he believes will be effective. The chronic attitude of worry is a perversion of normal foresight. In its extreme form it has been called *anxiety neurosis*.

305. Anxiety. During World War II physicians and psychiatrists saw many cases of officers and enlisted men whose chief complaint was extreme anxiety. Usually they had shown some signs of it in civilian life but not a disabling amount.

They had been able to control themselves during the war days for quite a while, calling on pride, duty, and loyalty to bolster them. But as the tensions of battle kept increasing and conflicts became more irresistible, these men would "break" in or after some tough spot. After returning to the rear they would display coarse tremors, be weak, have dizzy spells, find clear thinking out of the question, and want to run. There might be insomnia, restlessness evidenced in such things as chewing up cigarettes and chain smoking, and loss of appetite. Almost invariably nightmares interrupted sleep, and waking hours were plagued with anxious thoughts and exaggerated jumping at any sharp noise. These are the symptoms of anxiety, a vague, ill-defined fear and foreboding of the future in general. It is a genuine state of upsetness, not localized or systematized into any syndrome such as the hysteria or psychasthenia we shall discuss later. It is a sort of first step toward a mental abnormality, but if handled properly may never develop beyond this first stage. In fact many modern authors say that anxiety is found in some form or another in every psychoneurosis. (Horney, 27) The service men mentioned above were not necessarily neurotic; their symptoms were frequently relieved in a relatively short time by the skill of military physicians and psychologists. If a patient stays in this anxious state, at least mentally, if not physically, we may speak of anxiety neurosis.

306. Source of anxiety neurosis. Freud is responsible for the classification *anxiety neurosis*. According to him, it develops in a person who has an unconscious fear of his own libido, a fear he projects into the outer world and expresses in response to a great number of diverse conditions which sound reason would not invest with the pronounced dread that they seem to inspire in him.

Even a casual study of the chronic worrier shows unmistakably that he goes out of his way to find circumstances about which to fret. Remove the cause for one worry and he will find another and another in endless sequence until relatives and friends lose all patience with him. Whether or not, in every case, the cause is rooted in the patient's own libido, it is apparent that the worry is caused by something in the individual and not in the environment.

307. The soil in which anxieties grow. Every person is born in such a helpless condition that he finds himself totally incompetent to meet life; he must be sheltered and helped by the adults around him. Gradually he learns more about his environment and by trial and error—getting into one difficulty after another from which he must extricate himself—he learns a certain amount of skill, self-assurance, and how to get along with others.

If he has too much close supervision, too much help, or has all his desires gratified, with no effort on his part, he fails to learn independence of action; and when life assails him too violently, he realizes his incompetence and becomes afraid. Such an outcome may be seen when the pampered child begins his school career. He may develop a veritable panic and make violent attempts to stay in his mother's sheltering care. Entrance into school is no shock to a child who has learned to look after himself.

The feeling of insecurity may also develop from the opposite condition, where the child is thrust into a hostile situation and every attempt on his part to meet life results in failure and pain. He develops the habit of failure and shuns the conflicts of life, simply consumed with fear.

While most children adjust in later years to the ill effects of either too much care or too much thwarting when very young, such early training furnishes the soil in which later anxieties thrive.

308. Anxieties in adolescence. The person who is unschooled in recognizing what he wants, and in courageously attempting to achieve his desires, finds himself in a strange situation when he comes to the years of adolescence. Filled with a great many strange desires for romance, a career, and social recognition, he becomes thoroughly afraid of the strange restlessness he feels within himself, without realizing why he is so discontented. The normal person studies these restless urges, and formulates distinct ambitions that are possible, at least to a reasonable extent, in the society in which he finds himself.

It is very easy for the adolescent to project these vague fears and to express them as a fear of failing in schoolwork, or of not getting into the vocation for which he is best suited,

or of having committed some vague and ill-defined sin, or of having lost the affection of his parents or teachers. These worries are very common during the adolescent period and are best overcome by giving to each youth a sense of security by building up in him the habit of success, beginning with small victories and then progressing to greater ones. The feelings of insecurity, of being unloved, and of being alone in the world are very potent causes for beginning a career of maladjustment, and anxiety is one of the very first signs that something is wrong. In and of itself, anxiety is not a serious condition, but it denotes a lack of resistance that can be remedied if handled wisely.

309. **Anxieties in later life.** As an adult, one has more genuine difficulties to meet and so it becomes easier to deceive friends by projecting a morbid tendency to worry upon events that seem vital but that are not the real cause for the anxiety. For this reason, psychopathic difficulties are customarily blamed upon business worries, the death of loved ones, and similar disappointments. Since great numbers of individuals undergo similar misfortunes without parading them before their fellows, it is apparent that the real difficulty is in the individual and not in the outward circumstances.

A woman who is unhappy in her married life may show an excessive anxiety about the health of her husband in order to hide from herself an unconscious wish that he will die. Or she may be overanxious about the health of her child because she has a hidden fear that, if she loses him, she will lose the only means that she has for retaining the interest of a wayward husband. A man may be overanxious about the possibility of business loss because he has a secret fear that with the loss of his money will go his wife's affection. The forms that such anxieties assume are literally without number.

The cure, in each case, depends upon locating the real cause for the feeling of insecurity or dissatisfaction and effecting a remedy for this basic difficulty. To remove the avowed cause of the anxiety is utterly futile. The patient can find a dozen new things to worry about while one is being corrected.

LXXII. HYSTERIA AND MULTIPLE PERSONALITY

Hysteria is a neurotic personality disorder that manifests itself in a great diversity of physical symptoms. These take such numerous forms and occupy such a large part of the picture that one should guard against failure to see their significance. In fact, they often seem so clearly organic that we are tempted to think either that they are, or that the patient is malingering. Neither statement is correct. Closer scrutiny reveals that they are only good imitations of real organic disturbances and that the patient is not consciously aware of the meaning of his organic symptoms. That they do serve some purpose for him and thus have meaning does not make him any more aware of the true motivation. In both hysteria and multiple personality one part of the personality seems dissociated from the rest, and hence they are usually discussed together.

310. **Essential nature of hysteria.** Hysteria is one of the oldest known mental disorders. The term is derived from a Greek word meaning "uterus," indicating one of the earliest conceptions of the disease, that it was a disease of the womb. While this early theory has long since been discarded, the development of such a conception indicates that even at this early date there must have been a recognition of the prominence of sexual components in the disorder. Freud contended that it had a sexual etiology (cause), but as conceived by him the cause is hardly a mere "wandering of the uterus through the body," as the ancients thought, but rather a specific type of adjustment to failure in the love life of the individual.

We shall find that hysteria is essentially the resolution of a mental conflict by means of the adoption of some disease symptom. Some authors say that the energy connected with the mental conflict is "converted" into somatic or bodily symptoms, and the name *conversion hysteria* is given to this form. The essential background is some sort of unsatisfactory condition either in the individual's inner mental adjustments or in his adjustment to his environment. The form that it takes expresses the method he has adopted in an attempt to make his circumstances more to his liking. While varying greatly in degree, the essential nature is the same when we see a child feigning an illness to get attention and when we see a woman "paralyzed" for years in order to enslave her relatives.

The forms of hysteria are so manifold, the conceptions of the disorder that have been held at different times so diverse, and the nature of its symptoms so complex and mystifying, that to give a consistent picture of the disorder is extremely difficult. We believe that the real reason for this difficulty lies in the fact that the true nature of hysteria has not been understood. It has been regarded, until relatively recently, as a specific disease. A disease, as ordinarily considered, is a failure or perversion of normal physiological action. If hysteria is a disease (it was reasoned), there must be some physiological background for it; consequently, much of the study of hysteria has been in the nature of an attempt to discover such a physiological cause. Such attempts have proved futile. There has been found no lesion of the organism, no microorganisms such as give rise to tuberculosis, typhoid fever, and the like, sufficient to account for the manifold forms of the hysterical symptoms. This failure to find an organic lesion has led to the modern conception that hysteria is of a so-called "functional" nature. It is a disorder of the personality, a failure of the different attitudes, habits, and reactions of the person to work in harmony.

Hence the study of hysteria is a psychological problem. Its understanding presupposes a thorough comprehension of the normal functioning of the personality, an analysis of the training of the individual that made him the type of person capable of developing hysterical symptoms, and, finally, knowledge of the specific experiences that precipitated the disorder. It is quite true that the precipitating factor for many hysterias is an actual physical disorder retained by the patient long after there is any organic basis for it. In fact, Grinker and Spiegel (20) say that most of the war hysterias encountered in World War II were of this variety, and we should well expect that this would be so. There were enough opportunities for a physical disorder to be suggested to the patient as his way out of his mental struggle. The reason that the psychological conception has been so difficult for investigators to grasp is that the majority of them have not been accustomed to view the disorder as a development of habit patterns. They tend to look for a specific factor that could account for the symptoms found. Since personal attitudes

are the result of a great number of very diverse experiences, it can be seen that such a search is futile. Hysteria is a disorder, the symptoms of which are exceedingly variable, and which can be understood only from an analysis of its origin and growth. Furthermore, its treatment cannot be effected by a simple therapeutic agent but must involve a decided change in the personality. The patient must be re educated in such a way that he is a different individual, capable of taking a different attitude toward life, and prepared to respond in a different manner to life's varying conflicts.

Thus prepared to regard hysteria as a personality disorder we shall not expect too much unity in the various behavior peculiarities that have been ascribed to the disorder.

311. Conversion hysteria. We have already mentioned that the term conversion hysteria is used when the patient adopts some physical or organic disability as his way of avoiding anxiety or trying to resolve a conflict. Such disorders are involuntarily "adopted," however, not consciously assumed. In other words, the paralysis, loss of appetite, or anesthesia is just as real to the patient as though he actually had a nerve or muscle injury, a gastric disorder, or a sensory nerve lesion. To the outsider hysterical symptoms also always seem to have a certain organization and seem to serve a purpose in the patient's life. They get him out of a tough spot, gain attention and sympathy, or perform a real service to him. It is "as if" he had actually looked ahead to the consequences and chosen these symptoms to gain some desired end. (Guthrie, 21) Symptoms most frequently seen are:

1. *Convulsive attacks.* Convulsive attacks in hysteria assume the most diverse forms. They may so simulate epileptic attacks as to be almost indistinguishable from them. A person with epilepsy may, quite possibly, have engrafted upon the epilepsy an hysterical personality, so that the manifestation of epilepsy may be complicated by the hysterical episode.

Careful observation often shows that the hysterical attack is "staged"; it is always developed when others are present, the patient is careful not to injure himself, and, in many instances, he is benefited, although perhaps in an obscure way, from the episode.

In other instances, convulsive movements of the hysteric

are not in the nature of a complete fit but may take very peculiar forms. Whatever the form, they have the common characteristic that they are not distasteful to those afflicted with them. The patients say that they are trying to stop, that they do not like to perform peculiar actions, but at the same time they seem to be perfectly content to continue them.

2. *Motor disorders.* We have already described a number of functional motor disorders, such as tics, choreas, tremors, convulsive movements, paralyses, and contractures. The distinction between a functional motor disorder and an organic one is at times very difficult to make. When, upon careful examination, it is found that the movements have no organic cause, it has been possible, in many cases, to show that they depend upon the same factor as do somnambulisms, namely, a failure to integrate the whole personality.

3. *Anesthesias.* Anesthesias of a functional sort have long been recognized as indicative of hysteria. During the Middle Ages they were called "devil's claws" and were supposed to indicate that the possessor was a witch. One significant characteristic of these anesthesias is that they are in many instances definitely related to repressed or forgotten segments of the personality. The person has not so much lost his sensitivity as his desire to feel. In other words, memory loss and loss of sensitivity may accompany each other, the person having formed the habit of not feeling. (Guthrie, 21)

The anesthesias which conform to a functional unit, which we have described in a previous chapter, such as glove and shoe anesthesias, have been held to be particularly characteristic of hysteria. These anesthesias may be regarded as a blocking off in the nervous centers of a functional group of impressions just as the ideas that come forth in a somnambulism are segregated from the rest of the personality. We have also found that such localized anesthesias can be induced in hypnosis.

4. *Visual and auditory disorders.* The hysteric, to a marked extent, is supposed to be able to see and hear what he desires and to fail to see and hear what he does not wish to perceive. We recognize how this occurs in normal persons. Intense interest in a certain sensory object will blind us to other equally vivid sensory impressions. In the hysterical,

however, the physician may direct attention toward the object to be observed and still the patient declares he cannot perceive it. Furthermore, it can be demonstrated that under other circumstances the patient does observe the thing which at one time he asserts he does not perceive. Hence, we encounter the same process of dissociation in the visual and auditory fields that we have pointed out in the other symptoms of the hysterical, the same habit formation of not sensing. Of course, the reason for such habit patterns must be sought in the dynamics of the conflict situation and its relation to the personality.

In Chapter V we discussed at some length functional disorders of vision, audition, and other senses. In hysteria such symptoms frequently appear, especially as an organized pattern of symptoms which are the chief complaint of the patient. For a more complete description of the forms that hysterical symptoms may take you should refer to the sections on functional blindness, deafness, anesthesia, etc. In addition you will find further discussion of functional motor disorders in Chapter X.

5. *Autonomic disorders.* These disorders are so named because they relate to organs attached to the autonomic nervous system. There may be some cases of hysterical cardiac disorder, although these probably don't occur very frequently except as one symptom of a more complicated syndrome. Swellings, abdominal pains, belchings, coughing, and myriads of other symptoms may be of hysterical origin. Even disorders of respiration may occur which may result in forcing the breath over the vocal cords to make sounds like barking, howling, or mewling. Such sounds assumed almost epidemic proportions, reportedly, among the nuns in the convents during the Middle Ages.

One of the most distressing hysterical autonomic difficulties is *anorexia nervosa*, or the loss of appetite accompanied by a decided distaste and disgust for food. As might be expected, it occurs with some frequency among girls between the ages of twelve and twenty-one and starts with dieting. (Waller, Kaufman, and Deutsch, 53) It also may be complicated by amenorrhea. Such refusal to eat may be carried so far as to result in real emaciation and cause grave concern

on the part of parents and relatives. Such attention may be just what is desired, both for its own sake and as a distraction device to hide the real issue, which is a struggle within the personality. Family troubles are prominent in patients with anorexia nervosa, and it often occurs when there is the necessity for an adjustment of great psychological importance, such as leaving home for college or work, or for marriage, in which there has been parental pressure. (Waller, Kaufman, and Deutsch, 53; Farquharson and Hyland, 15) 312. **The personality of hystericals.** In another chapter (Article 203) we mentioned dissociation as one way of describing what seems to happen in certain kinds of memory impairment. This same description is a frequently given one for the mechanism operating when an hysterical patient develops a physical disorder or a somnambulism. The paralyzed leg, the anesthetized arm, the defective digestive system, seem to be functionally dissociated from the rest of the personality, symbolizing the dissociation of some irritating portion of a conflict situation. Are there some personalities who are more susceptible to hysterical symptoms than others, some common denominators of character which are found in those who become hysterical?

Clinical diagnosis and prediction would be much simplified if there were well-defined personalities in whom hysteria would be *the* psychoneurosis which would appear if any psychoneurosis became necessary. In spite of the fact that actually there is no "hysteria type" clinicians have come to expect to find certain characteristics in the personalities of hystericals. For example, (a) hysterical symptoms are more likely to appear in individuals who are best described as extroverted instead of introverted. In these extroverts emotional immaturity and social inadequacy are outstanding marks, and they have an intense hunger for personal approval. (b) They behave like spoiled children, expecting to get their own way, regardless of how others are affected. (c) They get little satisfaction from retiring into themselves, or remaining isolated; instead they are more objectively oriented, expecting others to notice them and appreciate or sympathize with them. Their egocentricity demands the presence of others who are expected to laugh or cry according to the feelings

of the hysterical who thus dominates those around him. (d) Paradoxical as it may seem, they are also quite suggestible, being keenly sensitive to the opinions and reactions of those upon whom they actually depend for bolstering their egos. This suggestibility can also be seen in the adoption of their hysterical symptoms. (e) From the above description we might almost predict that they would determine values and make decisions on an affective basis almost to the exclusion of a rational one. Love and hate are their criteria for truth and falsehood.

We should emphasize that we have described an hypothetical hysterical personality, for no one probably fits such a description accurately. But without the pure case the exception is difficult to understand. In the case we are about to describe we shall see many of the above characteristics, but some will not be so apparent, and there will be found some that would fit another "classification" more aptly. So it is with nearly every flesh-and-blood patient; he is predominantly one sort of psychoneurotic, but shows a few hybrid traits.

This case concerns a girl thirteen years old, given the fictitious name of Kate Fox by Carter (12) who describes her difficulties and background. When he saw her she showed three primary symptoms: (a) partial paralysis of her left leg, (b) extreme nervousness, and (c) marked loss of appetite. These symptoms had appeared nine months previously just before a school recess period when Kate had felt a numbness in her left leg and a needles-and-pins sensation. She found she could not stand on it and became very nervous. She was given crutches which she used for a while, finally being able to discard them and return to school, only to have another "nervous spell" and have to return to them. Physicians could find no organic cause for the paralysis or nervous irritability and concluded it must be hysterical.

When she was interviewed, Kate made a good appearance and talked intelligently. She tried to cooperate and told about her difficulty and also about several emotional upsets she had had recently, but they obviously had nothing to do with her psychoneurosis. She discussed school at great length, but

always steered clear of any discussion of her parents by earnestly assuring the examiner that there was great mutual devotion. Finally, during a lull in the interview, she broke down and told a sad story of a parental triangle affair. Her mother, to whom Kate was devoted, fell in love with a boarder in the home and planned to run away with him and take Kate along. Kate heard them discussing their plans, but she was not included when they eloped shortly thereafter. Kate, her father, and her siblings searched for and found Mrs. Fox and persuaded her to return home. But it was only to quarrel, fight, and fling poisonous invectives at her husband who only too willingly returned the compliments. These scenes sometimes lasted all night during which Kate and her sisters would cry and pray, their parents having toppled ignominiously from the pedestal on which the girls, especially Kate, had so lovingly and trustingly placed them. Something like a reconciliation was agreed on when one of the older sisters threatened to commit suicide if the parents were divorced. But the matter couldn't rest at that point. The paramour moved but only across the street where he was too handy as a target for the threats of Mr. Fox to shoot him if he got the chance. A friend of the paramour came to his rescue and tried to shoot Mr. Fox but was unsuccessful due to the intervention in the quarrel of a neighbor. Later the would-be assassin was jailed for robbery, and the paramour married someone else, leaving at least an outward semblance of calm in the neighborhood.

But all these experiences had their effect on Kate. She couldn't bear the thought that her family was not what she had envisioned and became melancholy and oppressed. She sought a way out in applying herself feverishly to her school-work but felt a violent fear of being with other girls. She even stayed in her seat during recess, but this solution was short-lived, since some of her friends felt they ought to stay in also to comfort her if she didn't feel like joining the others in recreation. It was at this point that Kate developed the paralysis which symbolized her inability to assimilate her sordid experiences into her personality. The triangle environment into which she had been precipitated didn't fit at all

her past experiences, and she had no old behavior patterns which could hang together with the new ones she was forced to build up. She developed a fear of the social intercourse she had once enjoyed, and a reaction system (her left leg) became functionally dissociated. Now, instead of having to try to adjust herself to new and trying situations, others had to revolve around her and make the adjustments. Things were done for her, and she was spared much of the sordidness of her home because her welfare was involved, and all rallied to her rescue.

The therapy involved was most excellent and portrays the necessary elements in helping an hysterical to rid himself of his symptoms. The examiner encouraged Kate first to tell her story completely with her own interpretations and then to go over it again and again, painful though that might be, until she could accept the triangle situation as something that had actually happened and to which she could adjust. As soon as she was able to do this, she no longer needed a dissociated reaction system; her left leg could be a part of her again, and her paralysis could leave.

In addition to its value in illustrating conversion hysteria, this case points up two matters which have been emphasized several times in this book: (1) the psychoneurotic does his best to keep the clinician and others from the real conflict, and (2) the home background and its effect on developmental history, are of paramount importance. Kate's effort to keep the discussion away from her relation to her parents, and the ugliness of the triangle affair, when compared with Kate's idealization of her home, are obvious.

313. Multiple personality. In the chapter on Disorders of Memory we saw that some people become so amnesic as to forget much of their past lives and to take up a new name, occupation, and way of living without recourse to who they were previously. We called these episodes *fugues*. In connection with dreams we saw that a person may go through complex performances while asleep without being aware of what he is doing or remembering about it after he awakens. He acts not at all like himself in such a period which we called *somnambulism*. Both somnambulism and fugue indicate, in a dramatic manner, the lack of integration that exists in some

personalities. A further indication of this seeming dissociation is multiple personality in which there are two or more personalities, each of which is so well developed and integrated as to have a relatively coordinated, rich, unified, and stable life of its own. (Taylor and Martin, 50) Cases of complete multiple personalities are very rare; only a small number of such cases have been reported. The distinction between somnambulisms, fugues, and multiple personalities is not clear-cut, but is rather one of degree. These types shade into each other by imperceptible degrees; indeed, it seems possible that a case of simple somnambulism may, by improper handling, develop into a case of multiple personality, and, conversely, by proper treatment may develop instead into a normal integrated individual. Harriman (22) has produced something that resembles a dual personality in a student who had daydreamed quite a bit about being on her own, like her girl friend in another city, instead of still in school. The experimenter had worked with the student under hypnosis and conditioned her to respond to a signal by pretending to be a different person. He tried giving this signal during a seminar meeting when the young lady was bored and drowsy. She looked up quizzically, wanted to know where she was, and told her fellow students she was the girl whom she often daydreamed about and wanted to be like. She even gave a little lecture about how snobbish college girls were and how little they knew about the satisfactions of earning a living. She did not understand that she was still herself, and claimed that the person who was away at college was her best friend.

Taylor and Martin say (50):

Like ordinary personality, multiple personality is a psychological product. In multiple personality the individual's native capacities and past and present circumstances, including health, training, preoccupations, and stresses, have caused him to develop at least one disparate, protective role. It is a role, in that it is a pattern, organization, or design for living, fairly well integrated within itself. It is protective, in that within it the individual can escape from some of his stresses, and so can feel more comfortable than he knows how to feel otherwise. This protective role is disparate, finally, in that it is more or less opposed to, and separate from, the rest of the individual's total mental make-up.

The individual derives the role from experience, whether passively or actively, and consciously or unconsciously. Passively, a role may come to

him from out of his own history, or from a living example, or from verbal or other suggestion. Actively, he may select or synthesize a role from his various observations and thoughts. In either case, apparently, he may be little aware or much aware that he is getting a role.¹

It is not necessary that the new role be diametrically opposed to the usual personality, although in many cases it is temperamentally so. Frequently, only a particular group of characteristics are changed. There may be a complete alteration of the personalities, or one personality may exist consciously with the other, being present but not active. Each personality may be amnesic for the other, or in some instances there is amnesia in personality A for what B does, but B is aware of the existence of A.

Students who are especially interested in descriptions of multiple personality should consult the work of Morton Prince (43, 44). By way of illustration we shall quote the summary given by Fox of a case originally reported by Sidis and Goodhart:

While alighting from his carriage, the Reverend Thomas Carson Hanna made a misstep and fell, striking his head. Upon recovering consciousness, two hours later, his mind was a blank. Not only had he lost the faculty of speech, but even the ability to recognize objects and persons. He was unable to appreciate distance, form, size, time, etc., and he did not even know how to use his muscles. Though the feeling of hunger was not affected, yet he could not interpret the craving, and he was ignorant both of the purpose of food and of the acts of mastication and deglutition. Spatial conceptions having been lost, he attempted to grasp a tree seen through a window. Among other curious mistakes, he thought a man on a bicycle constituted one living being, while a second man and the horse and carriage that he was driving were another living being of a different kind. In spite of his total amnesia he was very intelligent. At the end of one week of instruction he was able to read, and six weeks after the accident could talk intelligently. His dreams, derived from experiences of the normal personality, were so vivid that it seemed as if he lived over again past occurrences without, however, recognizing them as such. . . . Conservation of the memories of the primary personality was shown also by his ability to solve geometrical problems without being able to explain how he did so. It was thought that a large number of stimuli whose nature differed from that to which the new personality was accustomed might raise above the threshold of consciousness the submerged memories of his past life. If successful, such a procedure would represent fusion of the two personalities. Accordingly, he was taken to New York and subjected to a lively round of amusements. Two hours after having retired he woke as

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the normal Mr. Hanna, who was much surprised to find himself among strangers, and in strange quarters. He thought that he had been the victim of some practical joke. During the following six days the two personalities alternated until finally, during a psychic crisis, fusion occurred—the two states became synthesized. (Fox, 17, pp. 318-19)

We have seen that in conversion hysteria certain organic disorders or diseases are simulated by the patient and in multiple personality there are actually two different organized reacting systems. In neither case is there an integration; there is a kind of dissociation. We have also seen that hysteria develops more frequently in certain sorts of people than in others, and that it serves a "purpose" in their lives, even though they are not conscious of it. Yet we do not know just why other people who fit our description do not develop one of these forms of personality disorder. We need much more information about personality in general and about "hysterical" personalities in particular.

LXXIII. NEURASTHENIA

The essential symptom of neurasthenia is lassitude, the patient complaining that he lacks the vigor to pursue any task to its completion. The patient may have some physical weakness, but such lack of vitality does not constitute neurasthenia. A case may only be so diagnosed when the patient capitalizes his physical weakness and uses it as a defense mechanism.

314. Illustration of neurasthenia. Geoffrey M. was a successful executive in a large wholesale grocery firm. He was married and had two fine children of whom he and his wife were justifiably proud. He had never been an "outdoor man" nor the life of the party but had managed to get along rather successfully in any social contacts. True, he usually arranged things so that he would have something definite to converse about and often left social gatherings or even business conferences early. This was to humor his weak stomach and protect him from a recurrence of ulcers (which he had never actually had as far as any physician could detect). Moreover, he was quite susceptible to colds and influenza and had to have quite a bit of sleep and rest "to keep up his resistance." While he was never rude or demanding about it, he always managed to bring discussion to his

stomach, his colds, and how tired he got into any conversation. He delighted in mentioning how many things he had to do and how much he accomplished so that others could sympathize with him and understand how he could be so fatigued all the time. Sometimes, however, his wife and his immediate co-workers thought they detected that he wasn't nearly so overworked as he let on and really had no reason for his feelings of fatigue.

This situation was not so bad until he began being morose around home and claiming no one loved him or cared how ill he felt and how many trials he had to bear. He managed to get his work done, but could engage in no social activities and demanded all his family's time and attention while at home, claiming he was too tired to be of use to himself or others and felt "burned out" both physically and mentally.

315. Irritable weakness. Many persons have more ambition than they have physical endurance. Some are subjected for long periods of time to such violent demands upon their energy that they become thoroughly exhausted. If such depletion is accompanied by a prolonged drive to further exertion, such persons continue to operate "on their nerve." Their activities become less and less effective as they continue to drive themselves and they develop what has been called an "irritable weakness." This condition is evidenced by violent explosions of temper at the slightest provocation. The solution to such a difficulty is obvious. The patient needs rest, an opportunity to recover his physical stamina.

316. Adrenal insufficiency. In times of stress the adrenal glands normally increase their activity and the hormones thus secreted stimulate the person to act with greater vigor. Should the adrenal activity prove to be inadequate, the ability to meet an emergency is lacking, and the patient manifests a lack of vigor. This insufficiency can be tested by taking a blood-pressure record of a patient when in repose and immediately after physical exertion. If the blood pressure falls after excitement, instead of rising, there is evidence of an inadequate reaction to the exertion. Cases of this sort have been helped by adrenalin therapy.

These facts indicate that there is a condition of insufficient stamina based on physical factors, that one may become easily

fatigued because of endocrine lack. This condition should not be confused with functional neurasthenia, although Achard (1) suggests that many cases of functional neurasthenia may be actually based on the fact that the adrenals were at one time in the history of the patient affected by an infection such as influenza or tuberculosis which caused adrenal exhaustion.

317. **Functional neurasthenia.** Neurasthenia has been called the American Disease because our way of life seems to be conducive to its development. The great importance placed on getting ahead, being successful, rising a rung or two on the social ladder, being competitive, all seem to contribute toward frustrating some people so that they become discouraged, living lives that are disappointing and doing things they do not enjoy. Of course, this kind of life does not result in such drastic consequences in the majority of people, so we are not justified in proposing that we change our way of living because we are all becoming neurasthenic. There are factors other than this general scheme of living of Americans that are contributory to this form of psychoneurosis.

Neurasthenia is characterized by excessive fatigue symptoms based on an increased tension that is not relieved sufficiently for adequate relaxation even by going through the routine of sleeping. Neurasthenic patients frequently complain of being more tired on awakening than upon retiring. This fatigue-producing tension is aroused upon little provocation, slight frustrations or thwartings being enough to cause an upset in the individual's equilibrium. He becomes restless, seems constantly under strain, drives himself, and is overconscientious. (Poate, 41) He may seem to overwork, but this is a symptom, not a cause; i.e., he may feel compelled to work to justify his fatigue, if nothing else. In the histories of most neurasthenic patients, overwork is frequently significantly lacking; what is more likely is that they worry and stew so much that they think they are overworked. The feeling of fatigue frequently calls the attention of the patient to his body, and he becomes aware of his breathing, digestive processes, heart pounding, etc. He then proceeds to worry about them, whether they are functioning properly or not,

and he imagines that he must have something wrong with him. He may or may not localize his complaints, but in any event, they do not give him the peaceful satisfaction that we will find the hysteria patient seems to gain through bodily complaints. Sometimes the patient finds a rationalization for his chronic fatigue condition in his bodily complaints and derives a little feeling of relief in this way. But it is like jumping from the frying pan into the fire, for now he is pre-occupied with his physical symptoms and may become irritable. Such symptoms and the pouting that may go with them may win for the person some pity, attention, and sympathy from other people and thus be slightly adjustive.

But it can be seen that the neurasthenic pattern of attempted adjustment is actually not very adjustive. It seems to develop most frequently in people who have feelings of not being wanted for themselves, of being rejected, or of not being able to provide economically so that they will be desired and appreciated, and the neurasthenic reaction is an attempt at reassurance which works only partially. (Guthrie, 21) Since it develops most often in adults, more often in women than in men, and more frequently in married than unmarried persons, some authors have stressed a failure of marital adjustment in the etiology of neurasthenia. (Poate, 41) While it is a good practice to pin causation for any disorder to as specific a factor as possible, we must be content at present to say that neurasthenia seems to develop from some prolonged emotional strain over some conflict situation which, so far as the patient is concerned, cannot be expressed in any constructive way. (Dorcus and Shaffer, 14) Because it operates in a sort of vicious circle, neurasthenia is difficult to treat, although psychotherapy is certainly indicated and in many cases will be at least partially effective if not completely so.

LXXIV. PSYCHASTHENIA

The root meaning of psychasthenia is "mental weakness," but this meaning is quite irrelevant for our purposes although some of the inability of psychasthenic patients to control their thoughts and actions may give us the impression of weakness. The chief symptoms of this disorder, which may not be really very unitary, are phobias, obsessions, and compulsions.

318. **Phobias.** Because irrational fears so often appear in individuals who do not possess the other personality characteristics usually associated with the psychasthenic, they are often treated separately by various authors, and obsessive-compulsive neuroses are discussed together. We have preferred to continue the usual classification, since the three so frequently do occur together and may reinforce each other. A description of phobias has already been given in the chapter on Emotions, Article 260. It remains to suggest that the phobia achieves for the patient something that is not achieved in some other way. In most cases of phobia two characteristics stand out: (a) the fear is seldom actually experienced, and (b) either the phobia itself or some main portion of it is not discussed by its possessor. (Guthrie, 21) In other words, the person is protected from experiencing a fear because he steers clear of the objects or situations which will produce that fear, and he is protected from much conscious anticipation of the fear because he will not even talk about it. The man who is afraid of closed places (claustrophobia) scrupulously avoids them, and the woman who has a phobia for dogs does not even want to talk about them. One such person was dreadfully afraid of dogs; she did nearly anything to avoid coming in contact with even the friendliest of dogs, but she wanted her little boy to have one for a pet. She steeled herself as best she could and took the wise course of securing a tiny puppy to raise and train. Her husband brought him home and allowed his wife to be standoffish at first, but he kept the two in the same room for several hours. After a short period of time, the mother found she even wanted to pet the puppy and romp with him a bit cautiously, especially when her little son was doing the same thing and enjoying it. She was pleased to see him having so much fun and participated with him in his pleasure. The puppy soon became associated with this pleasure instead of the pain, and the phobia gradually disappeared. It had long since outlived its usefulness in all likelihood, and it was not even necessary to go back to the original circumstances to determine what caused the irrational fear, as is so frequently the case when the phobia is still serving a useful purpose in the person's life. The very fact that she had never permitted herself to come

in contact with dogs was enough to keep reinforcing her fear of them so that the phobia could not dissipate itself; no association with dogs other than an unpleasant one was possible under such circumstances. Neither did she release any emotional tension through talking about her fear, and so it persisted.

We have mentioned that sometimes a fear may serve a useful purpose in the life of the patient; in such instances such a simple reconditioning procedure may not be so effective. In such cases the phobia symbolizes a fear that would be distressing to the patient if he admitted it or of which he may not even be at all conscious. It is a sort of disguise for the more important factors in some complex, and the connection between the original situation of stress and the specific phobia may not be evident until after the conflict has been made verbal and the phobia dissipated. This means that in some cases where this is not possible we can only speculate about the conflict which the phobia is hiding. One may have a strong desire to do bodily injury to a loved one such as his father; his love for his father, plus the attitudes of deference toward one's parents developed in most children, may make him feel anxious and afraid of losing the affection and protection of the father. As a result he may develop a fear of high places which to the outsider bears only a strained relation to the conflict which is raging within the patient; and yet this camouflage of the dominance of the father and his superiority to the child in terms of height might be very effective for the person involved, and he can now be afraid of high places rather than of the father directly. In such a case, it is not likely that any simple reconditioning would be so effective because the situation that supports the phobia is a recurring one.

319. Obsessions and compulsions. Obsessions have already been described in Article 178. They are persistent thoughts that the patient would like, but is unable, to avoid, and he is likely to feel a slave to them. Compulsions are persistent acts that have no rational basis and are performed because of some inner need rather than because they are appropriate to the stimulating situation at hand. Sometimes they appear silly; for example, a child may assiduously avoid the cracks in a

sidewalk, or may step on each one, or feels he must kick each post he sees, or thumb his palm whenever he sees a white horse. If these are mere games, as they often are, they do not merit the name of compulsion. However, when the individual feels that he must perform these acts and is uncomfortable if he does not, then compulsive acts become significant.

When they do become serious, as in cases of compulsions to steal, to kindle fires, or to kill, the patient usually suffers no regret, but usually offers as an explanation that he could not help it, that he was impelled to do what he did by a force he cannot understand and over which he has no control.

In order to indicate the vast range of such compulsions we shall describe two extremes. "Maudsley tells of a man who for weeks was annoyed by an impulse to overturn two stones which lay upon a wall, finally forcing him to sneak out at night in order to perform the absurd act." (Diefendorff, 13, p. 507) Quite the other extreme is the instance of a man seized with the impulse to take an axe, go into the house of a group of strangers, and kill the whole household with the axe. In each case the individual confessed the same inability to resist the impulse when it came upon him. Regardless of the nature of the act these persons acknowledge a vast relief when they have acted upon the compulsion.

Both obsessions and compulsions are intruders that the possessor would like to be without but that he seems unable to control. They probably develop in the beginning stages to protect the individual from patterns of stimuli to which he has developed some kind of sensitivity. He may simply avoid these stimuli, but in the process he may need to inject some intermediary buffers such as obsessions and compulsions. The obsession hides the real issue which is distasteful to the person's conscious thinking, and attention is diverted to the obsessive idea; the compulsion may symbolize the protection from harm that the patient so dearly desires or win for him the feeling—however false—of the security he lacks.

320. Background for the development of psychasthenia. The case histories of psychasthenic patients rather regularly reveal that they have felt in need of safety and security, and the habits they have developed in an effort to fulfill these

needs have not been too successful. They try to accomplish a kind of security by arranging their world in an orderly way and living according to the rules of the game as they see them. They may be sticklers for rules, giving a literal interpretation to all regulations, and they frequently expect results in their efforts or those of others to reach perfection, never leaving any room for compromise. This makes them appear quite idealistic and overly conscientious, so stubbornly so that they stand up for their convictions under all attacks. Sometimes this stubbornly idealistic, conscientious, perfectionistic, working-for-the-good-of-all way of reacting seems to be a displacement or reaction formation. Actually the person has desires to get back at some one, to be hostile, or to perform some act that would not fit in with his personality as he conceives it, so instead he protects himself from doing these things in rituals, superstitious compulsive acts, and the like. It can be seen then that the psychasthenic individual is anticipating a frustrating, threatening situation and is preparing himself for it or for avoiding it. His anxiety is in some measure relieved by his psychasthenic symptoms, and so they are reinforced and held on to. But he still has not rid himself of his conflict, and it is taking its toll of his energy; he is left with the feeling that there are still things he ought to do for his safety and his protection. This indecision may spread to even trivial matters such as which tie to wear this morning or whether to have eggs or sweet rolls or both for breakfast. Every decision becomes a major crisis. (Guthrie, 21) We have already mentioned that in some instances a reaction formation takes place, the patient's actions being the opposite of his desire to stay on the fence as proof that he really is capable of making decisions without any trouble. This may lead the psychasthenic to take on real responsibility where he must make decisions, and he may do so fairly well if his conflict situation is not too pressing, but within himself he still maintains the questioning attitude, "I wonder if that was the correct decision after all."

321. Relation between compulsions, phobias, and obsessions. There is often a close relation between compulsive acts, phobias, and obsessions. The compulsion can often be explained in terms of an underlying phobia just as the ob-

session can often be explained by a basic fear. In some cases, the victim may be aware of the causal fear behind his compulsion but in a number of cases the subject has no realization of any emotional background. Let us examine some of the relations compulsions may have to phobias and obsessions.

1. *Compulsions and phobias.* A phobia in many cases leads naturally to a compulsive act. If a person has a fear of filth he may develop a handwashing compulsion. The fear of dirt drives him to a continual cleansing. In such a case it does no good to work with the compulsion if the underlying fear has not been removed. We had a boy in the hospital who was incessantly washing his hands. One day one of the patients told him that if he ever hoped to get out of the hospital he would have to stop washing his hands, that we kept him because he persisted in this performance. As a result he told the doctor he had stopped washing. Apparently he had. But when he was watched it was found that he was surreptitiously still washing. The trouble had not disappeared; he had simply decided to hide its manifestation.

2. *Compulsions and obsessions.* We are all familiar with the experience of having an idea persist until we are forced to act upon it. An illustration will indicate how this takes place normally. A young couple were touring the country in their car. One night they stopped at a hotel in a small town and since there was no garage they left their car parked in front of the hotel. Just as they had gone to bed the young wife said to her husband, "Did you lock the car?" Now, locking the car was an automatic performance for him and he was sure that he had done so. He assured his wife that he had locked it, but doubts assailed him and he was kept awake trying to recall whether he had or not. The more he thought about it, the more troubled he became, although he kept telling himself that he had locked the car. Finally, he dressed, went down to make certain, and, of course, found that the car was locked. Then he could go to sleep.

In pathological cases the doubt persists in spite of frequent assurances that there is no occasion for it. A patient will question whether she has locked the door of her room, will go and look and thus assure herself that it is locked. In a few moments the doubt will return and she must go again to

reassure herself. This may be kept up for hours at a time with dozens of trips to make sure that the door is locked. In such cases the reassurance does not remove the doubt as it did in the case of the young man and the automobile. Consequently, it is evident that the underlying cause for the doubt is the thing to be treated. When properly investigated it is usually found that the doubt is a symbol of the indecision arising from an unsolved conflict in the mental life of the patient.

322. Specific compulsions. Many individuals show a tendency to do some specific act of a particularly irrational sort whereas the rest of their actions may be relatively normal. These compulsions have been given the name *monomanias*. They, also, can be understood only if their underlying cause is discovered, and the name is not blindly accepted as the explanation. These compulsions take various forms. A few of the most important of these we shall mention.

1. *Ritualistic acts.* Ritualistic acts are little ceremonials that one goes through as accessories to the ordinary acts of life. One person always stops and bows before going through a door, another must touch the door jamb first on the right and then on the left side, another person will turn around in a complete circle before sitting down, another will make certain fantastic movements with his hands before rising. In some cases the movements are more bizarre. One boy will suddenly throw himself on his stomach upon the floor, mumble a few incoherent phrases, then kiss the floor and arise. In some instances these acts may resemble a religious ritual but are not usually recognized as such by the subject, who may be of a non-religious make-up.

Until recently such bizarre conduct was simply described as so much nonsense, was given the name "clownism," and was taken as evidence that the person was unbalanced. The psychoanalysts, however, have tried to interpret these acts as symbolic of some hidden mental process.

The method they used in arriving at such an interpretation was to have the patient give free associations to each of the different parts of his ritualistic act and then to piece these associations together. We get nowhere by the assertion that the behavior is meaningless, and surely the meaning we want is not what the acts might mean to an observer but what they

mean to the subject. If we can get true associations to the acts, we shall have valid material for interpretation.

2. *Wanderlust*. Some persons are seized with an uncontrollable impulse to ramble or roam about. They go here and there until their money becomes exhausted. Such a tendency means that for some reason traveling has become overvalued. Why? We must learn something of the background of the individual if we are to explain it. One boy was brought to the hospital with such a complaint. He had stolen some money and had taken a trip to a neighboring town, where he was found by the police. It was learned that he had made similar trips before the one leading to his arrest. Investigation showed that his mother had the same tendency: he doubtless acquired his interest in travel from her. His mother had a very unsatisfactory home relationship and had been periodically seized with a keen desire to return to her home in England. She had on three different occasions secured enough money to get to England but had to be supplied with funds from charity to return. At the time that the boy took this last trip his mother was stranded in England. The mother's trips were clearly the surrender to an impulse to get away from an unpleasant situation and to return to her childish life where she was no doubt much more happy. The home situation was no more pleasant for the boy than for the mother and he was simply adopting her tactics to escape it.

In general, wanderlust can be traced to an inability to face actual life situations. The foreign or distant scene always looks more glowing than our own surroundings, especially when the latter are far from ideal. Having reached the distant place, we find it just as humdrum as the one we left and so, if we have not learned our lesson, we must move on again.

3. *Kleptomania*. This is a term applied to an irresistible impulse to steal. Usually the stealing is particularly foolish. The stolen articles have no particular value for the thief and the stealing is often done in a childish and silly manner. Wealthy women, who do not lack for anything, will take articles from department stores. One man, whose wife had such a compulsion, made an arrangement with the stores frequented by his wife whereby they would send him the bills

for the things that his wife took. Healy (25) has investigated a number of such instances and has found that they are expressions of some mental conflict.

In some cases the articles stolen have the significance of a fetish. Burt (9, pp. 175-78) gives a good illustration of this sort.

A fifteen-year-old boy was taken for stealing a watch and some money from the school master. When asked why he took the watch he said: "I suppose it was the glass. I put my pen through it, and then smashed the works." Asked what he did with the money, he replied: "I wanted to pay for some glasses I had ordered." Investigation revealed the fact that he had accumulated fifty-four pairs of spectacles. Some he had found, others he had stolen. It appears that the boy was having a particularly hard time with his studies. This situation made him envious of others who were doing good scholastic work, several of whom wore glasses. The accumulation of glasses symbolized to him the acquisition of their mental ability. "The boy's main reaction appears to have been jealousy, with the almost fetishistic idea that to wear the externals of those superior to him in work would somehow confer their ability."

4. *Pyromania*. Probably the most dangerous of all compulsions is the morbid tendency to set fires. Property worth millions of dollars is destroyed each year by fires of incendiary origin. While some of the fire-setters are activated by revenge, or the desire to collect insurance, and some of them are actually feeble-minded or epileptic, many are driven on by morbid compulsions. The morbid compulsion to set fires is called *pyromania*.

The pyromaniac is fully conscious of what he is doing but pleads that he cannot control his actions when the impulse comes upon him. Not only is he unable to refrain from setting the fire but he is also forced to watch while the fire rages, obviously getting keen delight from it. Moreover, he confesses a great sense of relief after having started and watched such a fire. It is this latter characteristic that makes it possible, in many instances, to apprehend him, for he is usually found in the group of onlookers.

Each pyromaniac tends to start his fires in a characteristic fashion, as the following case from Magee (33) illustrates:

One fall morning two fires were discovered in a hotel located in an Eastern city. The first occurred in a vacant room, the other in a linen closet. Because of the suspicious nature of the fires state police were called

in to investigate, and it was soon learned that similar fires had occurred in five other hotels in cities located near-by. A check of the registers disclosed that at the time the fires occurred there was but one guest present at every fire. Naturally, suspicion was directed toward him, and he was subsequently arrested. During the investigation this individual confessed to setting not only the five fires in question, but a great many others in other cities and in distant states. A check of fifty reported hotel fires showed that this man was registered as a guest in over half of them...

There were no peculiarities reported by the investigators that would indicate any mental difficulty other than the propensity to set fires. He was to all appearances normal, able to go about his business and hold his job. A press notice at the time of his arrest stated of him: "He is described as a man of superior education and is employed by a reputable Chicago firm. He could assign no reason for his acts beyond the satisfaction of his desire to behold destruction by flames."

In an epidemic of tenement fires a number of them were traced to a single individual, who always started them in baby carriages left in hallways. Other pyromaniacs are attracted to special types of buildings, such as barns, schools, or churches.

Yarnell (57) has made a careful study of fire-setting in children and comes to some valuable conclusions. She finds that the child eight years and younger does not often set fires that have serious consequences and that they frequently put them out themselves. Their phantasies about fire indicate that they often associate with fire a strong force that can give them power over adults. These occur most frequently in children who have felt deprived and were forced to assert themselves by aggression against an intolerable home, school, or society. They seize upon fire as a potent weapon, almost magical in nature, and as is usual they show many other signs of maladjustment such as running away from home, stealing, anxiety, terrifying dreams, and the like. Sexual conflicts may also appear.

323. Treatment of the psychoneuroses. We have tried to show several patterns of behavior, deviating from the normal, but not always completely disabling, which have been called psychoneurotic. Neurotic patients may live in and contribute to a normal society without appreciable harm to others but with a constant feeling that their own lives are ineffective or shackled or that they cannot fulfill their urgent needs. What can be done to conserve such patients and help them

to direct their energies more fruitfully into productive and satisfying channels of behavior? In some instances it must be recognized that the neurotic pattern is so entrenched or produces certain derived satisfactions to such an extent that the remedy is either not feasible or too involved; not much can be done. But in many instances carefully conducted psychotherapy, principally of the interviewing and counseling variety, leads to some alleviation of the mental conflicts behind the neuroticism and to better modes of adjustment. Psychotherapy will be further discussed in Chapter XVIII.

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CHAPTER XV

FUNCTIONAL PSYCHOSES: SCHIZOPHRENIA

Some writers feel that we should speak of schizophrenias instead of schizophrenia, since there are several disorders of varying symptomatology bearing that name. In an earlier edition of this book, we discussed two of these forms in one chapter (simple and hebephrenic), a third form in another chapter (paranoid), and a fourth form in still a third chapter (catatonic). While there is strong evidence supporting such a separation for discussion, we shall follow the more usual practice of grouping them all together in one chapter. We shall try to see what might be common to all forms of schizophrenia, i.e., what constitutes the classification, schizophrenia, and then discuss the four types of this functional psychosis.

324. Schizophrenia as a functional psychosis. We have seen in Chapter XIV that we must differentiate the normal from the psychoneurotic from the psychotic. We saw that the psychoneurotic was one who had serious difficulties in making adjustments to the demands made on him, and he resorted to many devices, mechanisms, and subterfuges, but he always maintained a certain core of personality organization; he did not become a different person. With the psychotic, the entire personality is involved in the disorder, and for the duration of the psychosis he does actually appear to be a different person than he was before. A psychosis is thus a very severe and serious mental disorder involving the personality to such an extent that the person is to some degree disabled in his mental life. It is the extreme degree of abnormality.

Some psychoses accompany in a regular way certain organic changes or toxic conditions in the body. Paresis is associated with syphilis of the brain, certain psychotic manifestations accompany some forms of alcoholism, and there may be psychotic complications of adrenal disease. We cannot say that the organic disease itself produces the psychosis in a specific way, but the psychosis does develop as a result of the disease. The specific content of the psychosis cannot

be predicted, but the general form of the psychotic behavior can. There are also psychoses which have no known organic basis, at least not in the accurate sense that paresis has brain syphilis for its cause. Very important in the development of these diseases are factors in the developmental history of the patient. His habit patterns from early childhood, traumatic experiences, environmental factors, and the like contribute heavily to his breakdown. We have already referred to such disorders as functional. The chief difficulty is in the functioning of the organism, not in the structure. Even if a difficulty in the structure may at some time be found, it is quite likely that it alone would be inadequate to account for the psychotic behavior. There is involved in addition the "vicious mental habits," as Adolf Meyer has referred to them. Recent genetic studies of functional psychoses present new evidence that there may be constitutional predispositions which make some people more susceptible than others, but the evidence is not completely convincing. It is the opinion of the present writers that constitutional predisposition is not *necessary* for the development of the functional psychoses, but that faulty habits and developmental history may be sufficient by themselves to produce psychotic behavior, even if in some instances there may be found organic causes for some of the common functional psychoses: schizophrenia, manic-depressive psychosis, and paranoia. For the present, then, we shall consider schizophrenia functional.

325. The terms, *dementia praecox* and schizophrenia.

The term *dementia praecox* was coined by Kraepelin, a German psychiatrist, who has devoted much energy to his attempts to classify mental diseases according to their symptomatology. He found a large group of patients whose main symptom *seemed* to be a mental deterioration. Since no anatomical lesion could be discovered to account for the loss of intellectual capacity, these dementias were thought to be of functional origin. Kraepelin called the disorder *dementia praecox*, thinking that this dementia was a specific disease which developed in early life and which led to rapid mental deterioration. Upon more careful study of his cases he found very great differences in symptoms and consequently subdivided *dementia praecox* into specific types. This subdivision

was continued until he found what he considered to be ten different types.

The diagnosis of these types by means of a study of symptoms is practically impossible, so that most psychiatrists confine themselves to four main types: namely, simple dementia praecox, hebephrenic (adolescent mind) dementia praecox, catatonic dementia praecox, and paranoid dementia praecox. Many hospitals find sufficient mixture of symbols to label many patients, Dementia Praecox (or schizophrenia), Unclassified.

Upon close study it has been found that the dementia in dementia praecox is not at all a true dementia, but that it is really a disorder of personality integration. Besides, the disorder does not necessarily begin in early life, as the term *praecox* implies. The incidence of the disorder ranges from fourteen years to over fifty years.

Bleuler has advocated the substitution of the term *schizophrenia* (meaning split mind), contending that the outstanding characteristic of the disease is a splitting of the personality. It should be kept in mind that this splitting is not into two separately integrated segments, alternating with each other in consciousness as might be descriptive of double personality. It is rather the splitting off of the affective patterns of behavior from the more intellectual or motor ones. It is really better described as a lack of integration or a disintegration of the personality than as a splitting. Bleuler also contends that we should rid ourselves of the idea that schizophrenia is a single disease entity. He uses the term in the plural (*schizophrenias*), because there are a number of disorders manifesting a splitting of the personality, the different forms being based on different personality maladjustments. While the term schizophrenia may not be the best that could be chosen, it does keep before us the fact that the disorders it embraces are primarily disorders of the entire personality, and avoids the implication that dementia is an essential characteristic.

326. **Theories as to the nature of schizophrenia.** A number of very conflicting opinions as to the nature of schizophrenia have been advanced. Some of these deserve our consideration.

1. *Arrested mental development.* According to some writers, schizophrenia results from an arrest of mental development. The theory is that each individual starts his career with a certain potential, which, in a normal person, is sufficient to tide him over the crises of life and to enable him to progress mentally until some disease or atrophy carries him to the grave. In some individuals the potential energy seems to be deficient so that they advance normally to a certain point and then cease to progress. The theory has little to support it. Some investigators have thought they found cerebral atrophy in cases of schizophrenia, but the evidence is not clear-cut enough to substantiate this hypothesis. Furthermore, most cases show, not a stationary condition when the alleged potential energy is consumed, as the theory would indicate, but a definite regression. Finally, the theory fails to account for the striking emotional changes which are characteristic of the disorder.

2. *Autointoxication.* Kraepelin, believing the disease to be primarily a disease of adolescence, and noting the relationship of the symptoms to such physiological conditions as puberty, disturbances of menstruation, childbearing, and the climacteric, thought the disease to be caused by autointoxication, in some way related to the physiological functioning of the sexual organs. This thesis has not been disproved, but, on the other hand, there has not been sufficient evidence to substantiate it, in spite of a vast amount of research directed toward this end.

3. *Vicious mental habits.* Adolph Meyer has advanced the view that schizophrenia is built upon a background of vicious mental habits. He was led to adopt this view through the observation that although, in many cases, there seemed to be evidence of some infection, trauma, or relationship to sexual functioning, in a similar number of cases such evidence was lacking. He says:

Every individual is capable of reacting to a very great variety of situations by a limited number of reaction types. The full, wholesome, and complete reaction in any emergency or problem of activity is the final adjustment, complete or incomplete, but at any rate clearly planned so as to give a feeling of satisfaction and completion. At other times there results merely an act of perplexity or an evasive substitution. Some of the reactions to emergencies or difficult situations are mere temporizing at-

tempts to tide over the difficulty, based on the hope that new interests would crowd out what would be fruitless worry or disappointment; complete or incomplete forgetting is the most usual remedy of the results of failure, and just as inattention and distraction correct a tendency to overwork, so faultfinding with others, or imaginative thoughts, or praying, or other expedients, are relied upon to help over a disappointment, and as a rule successfully. Other responses are much more apt to become harmful, dangerous, uncontrollable. What is first a remedy of difficult situations can become a miscarriage of the remedial work of life. (Meyer, 54)

On this hypothesis, that conduct originating as a defense mechanism may be organized into a habit system, Meyer shows how schizophrenia is a continuation of particularly vicious defense reactions. This view is gaining ground in some quarters so that today we tend to look upon what has been called schizophrenia as a form of personality disintegration caused by pernicious reactions to difficulties which the patient has encountered; whether any hereditary predisposition is postulated depends on the authority questioned.

By pernicious or vicious reaction is not meant unworthy reaction, but one which results in disharmony in the personality. We should remember that our complex civilization imposes ever-increasing burdens upon the developing life, in the face of which the marvelous thing is that so many individuals are able to make satisfactory adjustments.

4. *Constitutional factors.* Some authors say or imply that schizophrenia is inherited as a Mendelian recessive characteristic. (Lewis, 51, Kallmann,¹ 39) Others, after having studied the ancestry of schizophrenics, conclude that it is inheritable but not in any predictable Mendelian fashion that has yet been discovered. (Pollock, Malzberg, and Fuller, 58) Lewis (51, p. 102) says, "A belief in the importance of heredity as an etiological factor in dementia praecox is usually expressed by students of psychiatry." Because of the lack of control of environmental factors in studies of the inheritance of schizophrenia many psychologists cannot accept at face value the evidence that psychiatrists, geneticists, and biologists sometimes present as favoring a hereditary basis for the disease. Certainly we would wish to reserve judgment and to feel that there might be many cases of schizophrenia that develop

¹ An excellent, concise summary of Kallmann's conclusions is given by Garrison (26).

on the basis of "vicious mental habits." Another approach to the etiology of schizophrenia is the constitutional one, which implies that the structural constitution of the person predisposes him toward certain personality trends and that these in turn will be influential in the type of disorder he develops in case he becomes maladjusted. The schizophrenic would develop from the asthenic sort of constitution of Kretschmer. Some are not so specific, positing predisposing factors of a more general sort, but the basis for the development of the disease is in the constitution of the person rather than in his personality development based on learning. There has been a tendency on the part of many psychologists to doubt the validity of any such proposals because they have not held water under rigorous investigation in the past. We must admit that the issue is not a closed one, however, and the work of Sheldon and Stevens (66) and others in recent years has reopened it for many formerly skeptical persons. Obviously, the bias of this text is that constitutional factors *per se* do not play the major roles in the development of mental disorders, schizophrenia included. The developmental history of the patient, his habits, attitudes, motivation, and experiences are fully as important and maybe even more so. Surely we will not pin ourselves down to a specific organic basis for all cases of schizophrenia.

LXXV. ESSENTIAL NATURE OF SCHIZOPHRENIA

While there are various manifestations that are labeled schizophrenia and the background for each type may be somewhat different, the clinician recognizes certain symptoms which when combined in a single case he calls schizophrenic. The tendency in several hospitals to place many persons into an unclassified schizophrenia designation testifies to this commonality. We should keep clearly in mind that textbook descriptions are always generalized, and no patient may fit the description exactly, but we must try to see clearly what is basically involved in any mental disease. For this reason we shall take some of the characteristics of the schizophrenic out of context and examine them briefly, but, first let us look at a description of a schizophrenic experience by a patient.

327. Illustration of subjective experiences during schizophrenia. French and Kasanin (25) give an excerpt from a retrospective account of a schizophrenic illness by the patient, who later recovered.¹

¹ Reprinted by permission.

"I went through what I thought was positive hell. I believed myself to have been dead many years. I thought I had been so wicked on earth that I was not allowed to live on it any more and that only the good people were allowed to enjoy its luxuries. It seemed like years and years instead of days and days. To be really dead was my only craving for I had no hope of ever enjoying the luxuries, if one might call them such, of my home again. If only I could have ended everything for myself....

"One of the patients reminded me so of Tracy's [the man she loved] mother that I felt it was she. I thought she was there to attend the trial. She would look in my room all the time and hated the sight of me with a profound hatred, while in reality she was quite fond of me. His father, who I imagined Dr. P. to be, hated me likewise and was so severe—so different from what he really was. One of the student doctors was Tracy. Tracy had a lot of sympathy for me now but no love. He was chagrined and would not recognize me in this condition. I was a horrible girl and he a successful surgeon....

"Soon after, perhaps a week (it seemed years) of agony I found myself on a boat bound for Italy. I had been kidnapped and what not. I was relieved of my suffering to a very small degree by being taken into another world. I must now suffer for my sinful life upon earth. Consequently I was being transformed into a snake. Hence the food, cornmeal mush with molasses (Indian pudding) and plenty of milk, for snakes thrive on milk. The very hairs of my head were each one changing separately into a snake. I myself was going to be a huge one. These thoughts sent shivers through me. It was horror again. No one can believe, no one can understand—for it was so real to me, so true to life. Anyone who looked at me long enough would take on a peculiar facial expression which I thought lasted; that was why people looked in and walked away and could not bear to see me. Why did I always hide? For fear someone who had known me would see me in this condition. I heard my friends' and relatives' voices. They all wanted me to return home. I could hear them pleading with me....

"I was so dissatisfied with the life that I had led and the small amount of religion which I had possessed that I determined to become a Catholic. The Catholic religion seemed to me to have more back of it (really I did not know a great deal about it). They had to confess their sins to the priest while we kept everything hidden within ourselves and lived our lives as we chose. Attending church was optional. What sort of religion was this, the Congregational faith? Merely effective, nothing more. Consequently I became (I sincerely believed) a Catholic. I spoke to the attendants about it and they were unusually sympathetic. I waited for a priest to come but apparently I was in no condition to be seen. So they put me in packs and I returned to hell once more where I remained for how long I do not remember....

"The next thing I remember was being tube fed. I looked up into the doctor's face and she reminded me so much of a dear friend of mine that I felt she was there to help me. I wanted to talk to her but as I believed myself to have been dead I couldn't bring myself to do so. I wanted her back more than anything else....

"Finally I felt that I had just awakened to the fact that I had been missing from my family for some months and that they were looking everywhere for me. A war had taken place on account of me, everything was wrong everywhere. My family must never find me. So I kept hiding. Consequently when my father came I did not want him near me. First because I had been dead. I was now Catholic and then too they were apt to look him up and molest him. I alone knew the extent of his goodness upon earth. He brought me ice cream. How absurd this seemed to me. To please him, however, I often ate it. . . .

"Was it possible that I was really L.A.B. at one time? How was I to know? There was no mirror around. I found scars on my legs which were there before and my hair seemed to be the same. The fact too that one or two people called me Lucia. These things alone seemed to prove my identity. . . .

"The hydro is like a morgue to me. I felt they were reviving people who were dead. . . .

"On my return from the hydro one particular day I was sitting in the sun parlor. The doctor that tube-fed me went by. When I smiled at her she responded by coming to talk to me. Because she said she would talk to me only if I wanted her to, I was willing to try. She asked me what I wanted most. I said 'a chance to live again.' When she said that I would have this opportunity, it seemed just the most remarkable thing imaginable. . . ."

328. Withdrawal. One of the first things to be noticed about the typical schizophrenic is that he has withdrawn from active contact with the world about him. He appears to have fled the hard realities of life and taken refuge into a world of his own where perhaps his daydreams can take on the form of reality for him. He has more or less retired into his shell to let the world go by except for the things that must be done to preserve his own kind of life. And even these are often neglected and must be urged on him. Many patients will go willingly to the table for a meal when told or led but will not bother to think of doing so for themselves. In the less severe stages of schizophrenia we see this withdrawal expressed in a lackadaisical, apathetic, indifferent attitude toward everything and everybody, and in the more striking catatonic we may see stuporous conduct. Even reaction time is slower and more variable than in normals. (Huston, Shakow, and Riggs, 38) The others will be so withdrawn as to have no interest in or contact with the world about them. The withdrawal of the schizophrenic is a form of adjustment—a static form without the essential process of readjustment

that is the true description of the kind of adaptation normal individuals strive for.

329. **Emotional blunting.** Perhaps this is the outstanding symptom of schizophrenia and makes more understandable the withdrawal that may be more obvious at first glance. This is not to say that the schizophrenic is without emotions. Clinicians have long since come to the conclusion that there may be a great deal of emotional content to the thinking of the schizophrenic, but it is his own emotions he is interested in, and the emotions he expresses are unrelated to the environmental stimulations around him. His blunting and dulling are with reference to the situations he finds himself in. He remains emotionally immune to the world about him and pays for it by having to cut off all relations with that world. (Brüel, 9) Such emotional indifference is shown by the completely inadequate responses made to stimuli. Tell such a patient that his wife has just presented him with a fine baby boy and he may reply, if at all, "That was nice of her. You know I have never liked olives." So far as one can judge he fails completely to grasp the situation. Even telling him that one of his very near relatives has just died may evoke no more than a polite comment. His emotions then are apathetic, indifferent, and he does not seem to express joy, sorrow, jealousy, anger, or fear at the times one would normally expect a person to do so. Whatever emotion he does show is more likely to be generalized—a sort of excitement—than a specific joy or sorrow or anger. Since he is emotionally not a part of the world about him, he is under no obligation to show cooperation or to care about what others think of him. The illustration given at the beginning of this section shows clearly the intense emotional experience of the patient and how it was totally inadequate to the reality about her.

330. **Apparent dementia.** Kraepelin was impressed with the inability of certain of his patients to perform efficiently on intellectual problems although he had reason to believe that at one time they had been able to do so. This seeming dementia was one of the marked symptoms, and consequently he labeled the disease, *dementia praecox*. Babcock (3), noticing the same kind of phenomenon, constructed a test for measuring mental efficiency in order to have a quantitative

indication of the degree of deterioration. She was able to demonstrate that these patients had performed at a certain level of mental ability before the onset of the schizophrenia and later showed signs of a definite slump in the way they behaved in the standardized test situation. This universal decline in intellectual functioning led her to postulate a real deterioration in schizophrenic patients. When a person gives an intelligence test to many such patients, he is certainly impressed with the peculiar ways in which they respond to the situations presented to them. In some cases of reasoning, for example, the schizophrenic is able to hit close to the right answer, but he never quite comes out with a correct solution; he may have somewhat the right idea, but it is very loosely organized and phrased. In other cases his association processes are so confused and controlled by his own inner conflicts and complexes that he answers questions in bizarre ways, maybe having a few elements of the correct reasoning process but also many unrelated factors and all of them mixed up into a jumble. (Cameron, 10) For example, if you ask a patient to complete the statement, "You are alive because . . .," he may reply, "... because you really live physically because you have menu three times a day; that's the physical." You ask him further, "What else is there besides the physical?" His reply may be, "Then you are alive mostly to serve a work from the standpoint of methodical business." (Cameron, 10) This patient does not show the worst kind of disjointedness in his thinking, but he cannot express just what he wants to say, although one has the feeling there is something there that might make sense if translated. He makes a fundamental error in concept formation. Some writers in the field are convinced that the chief difficulty with the thinking of the schizophrenic is in concept formation, particularly in the ability to assume the "categorical attitude." (Goldstein and Scheerer, 28; Hanfmann and Kasanin, 32; Bolles and Goldstein, 8) These authors describe the ability to classify, abstract, generalize, and categorize as a basic capacity level of the total personality which is lacking to the schizophrenic. He is limited in his thought processes to the level of the concrete. Whether this is universally true of schizophrenic thinking is not yet known, but it is certainly

descriptive of much of it. At least he is unable to get at the heart of any associational problem. (Hunt, J. McV., 35)

The speech of the schizophrenic patient is bound to reflect these dislocations of thought. It has a shattered appearance, as has already been described in part. Neologisms (newly coined words) often appear which have no meaning to outsiders but which apparently have meaning to the patients since they use them so frequently. In a few instances patients have explained their meanings, and they have been found to be contractions or combinations of parts of words—a sort of shorthand to the patient who never bothered to care whether other people understood his language or not.

This kind of thinking gives the appearance of deterioration; surely patients who indulge in it are not acting and thinking in any efficient manner, in any manner that could be called intelligent. The question has been raised as to whether it is a true deterioration; i.e., a loss of real capacity. If so, patients who recover from schizophrenia and no longer demonstrate these defects of intelligence would be presumed to have regained that lost capacity. Some writers have assumed that such would have to be the case, that there was a true organic deterioration. (Babcock, 3) Others (Kendig and Richmond, 46; Wittman, 74) have shown that the apparent dementia or deterioration of the schizophrenic patient is due to his extreme maladjustment and state of withdrawal; he is uncooperative with those around him, and his attitude is such that doing well in the eyes of others is unimportant. When he is tested under more favorable conditions, when he is more cooperative and his attitude is improved, his intelligence efficiency score goes up also. This does not happen with patients who have a known organic basis for their deterioration. There seems little reason to say that the deterioration of the schizophrenic is a real one in the sense that a capacity based on organic conditions is lost. The behavioral picture is one of very low mental efficiency, but the reason is more in the personality of the patient than in the loss of an organic ability.

We should not leave the impression that all schizophrenics show the same degree of mental deterioration. They do not; there are varying degrees from slight to very severe. In

fact, the various kinds of schizophrenia have been differentiated in terms of average scores made on an intelligence test as follows: The catatonics are relatively close to normal; the simple schizophrenics are next; the paranoids third, still frequently being close to normal; and those classified as hebephrenic schizophrenia or as "schizophrenia unclassified" showed the greatest lack of intelligent behavior. (Roe and Shakow, 62)

331. Hallucinations and delusions. With the possible exception of some cases of simple schizophrenia very few patients escape having hallucinations and delusions. This might be expected in persons whose affect has been so altered and whose personality has been so eroded as to render their thought processes incapable of normal integration. Hallucinations are normally of the auditory type; voices talking to the patient are the most predominant kind. Very frequently these voices condemn the patient, or control his thoughts, or call him vile names and accuse him of immorality, obscenity being commonplace in schizophrenic hallucinations. Sometimes these hallucinations are credited with the responsibility for the acts of the patient; for example, when he is told to throw furniture or not to answer questions. Not all patients obey these commands, however. Taste, vision, and smell come in for their shares of hallucinations, although they are not nearly so frequent as the auditory ones.

Delusions are outstanding symptoms of paranoid schizophrenia, but warped beliefs occur also to a lesser extent in most schizophrenics. Ideas of reference are the star performers. Everything that is done or said has some bearing on the patient himself. Even cartoons in magazines and newspapers may, in the schizophrenic's belief, be directed especially at him. Such an egocentric attitude is descriptive of the withdrawn, emotionally dulled person the schizophrenic is. Very common also are disorganized and often contradictory delusions of persecution and grandeur, which have been discussed in an earlier chapter.

LXXVI. SIMPLE SCHIZOPHRENIA

This is commonly designated in the literature as simple dementia praecox or *dementia simplex*. The more commonly accepted term is simple schizophrenia. It includes the mildest forms of regression which are severe enough to be considered pathological.

332. **History of development.** The diagnosis of this disorder is usually based on a characteristic history.

1. *Early normality.* The simple schizophrenic individual, as a child, usually shows promise of being a normal, well-adjusted citizen, progresses in school normally, seemingly gets along with his fellows, takes an active part and interest in school and social activities and is generally regarded as a normal child in every way.

2. *Emotional change.* Without anybody's, apparently, being able to explain the reasons or even noticing, for a time, the difference, conditions change. The child begins to lack interest in things, he becomes seclusive, cares little or nothing for social activities. His teachers complain that he has become lazy, that he is failing in his work, and usually try the traditional methods of coaxing and discipline with no avail. Often he is quite inactive, is apparently dreaming while others are actively interested in their environment. As a reaction to the attempts of his teachers and friends to stimulate him he may either grow sulky or irritable or both in turn.

Now this change does not constitute enough evidence to make a diagnosis of simple schizophrenia. Many young people at the time of adolescence show the effect of adjustment to difficulties incident to this period. Most persons come through this period with but few residual effects. What distinguishes the simple schizophrenic is that he continues to show the reactions of this period throughout the rest of his life. Consequently, it is only after a long-continued display of these reactions that simple schizophrenia can be diagnosed.

3. *Permanent inertness.* What happens when one, for a period of years or for the remainder of his life, appears lazy, uninterested in his work or in society, and is indifferent to the things that stimulate the normal person? He becomes a ne'er-do-well. The last stage in the history of these patients is, then, a long-drawn-out life of shiftlessness. They become

hoboes, prostitutes, pseudo-geniuses, cranks, and eccentrics. (Lewis, 51) They harm no one but they never get along. They infest employment agencies, are usually pitied and become the wards of social-service agencies. Secure a job for them and, for no *reason* at all, but with any one of a thousand excuses, they quit and come back to ask you to help them get another. If it happens that they are born in families where there is sufficient financial support they become the typical "lounge-lizard" or idle "old-maid." With no financial backing they become "happy-hooligans," tramps, and bums.

Not all persons indicated in the last paragraph can be called simple schizophrenics. It is only when they have shown the first two stages that they can be so diagnosed. They must have shown promise when younger and then stopped normal progress.

333. Age of onset varies. The onset need not always come at adolescence. Bleuler (6) gives a case that became critical at the age of fifty. A man who had been a successful teacher, at the age of fifty began to show a laxness in his work. His discipline relaxed and his teaching became so poor that his resignation was requested. Instead of seeing that the trouble was with himself, he demanded an increase in salary and entered into litigation "about his rights." At last he threatened to thrash the authorities and had to be taken to a clinic for treatment. At the clinic he became calm and after a period of eight months of re-education was discharged without protest. Since that time he has been working for nearly twenty years at menial farm jobs. This history indicates at first an attempt at a compensatory reaction followed by a surrender of the typical indifference and retreat of the simple schizophrenic.

334. Characteristic emotional dilapidation. The outstanding symptom in all this picture is an emotional dilapidation. Emotions, as we have found, serve to stimulate a person to overcome a difficulty. The simple schizophrenic develops a permanent emotional indifference, a permanent "don't care" attitude. Many normal people say that they "do not care," but beneath it all they do care and show it by continuing to face and fight their difficulties. One does not hear the simple

schizophrenic say that he does not care. His actions indicate that he does not.

There are no other symptoms of any importance in this disorder. In the perceptual field the victims may show a fleeting hallucination, but it is of no consequence. They build no delusions. They have not enough drive to develop any such defense mechanisms.

Plainly, these persons do not show any real regression, but merely a lack of progress after a certain point. The fact that they drift for so many years with no noticeable deterioration indicates this. Because of this slow disintegration, it is often some years before the true nature of the difficulty is recognized, yet these persons should be classed as regression cases; for, theoretically, no one can remain stationary. The normal line of development is forward and, in this sense, any one standing still is really falling behind the progression that is characteristic of the normal individual.

LXXVII. HEBEPHRENIC SCHIZOPHRENIA

The term hebephrenia is a combination of two Greek words which mean youthful mind. Although 75 per cent of the cases develop before the patients reach the age of twenty-five, the present conception of the disease would render the actual age of onset unimportant.

335. Essential characteristics of hebephrenic schizophrenia. Hebephrenics show all the characteristics mentioned in Section LXXV to a marked degree; we shall repeat some of them to give a complete picture of this disorder. If we keep in mind that its most essential elements are ingrown emotional patterns and withdrawal from reality, we can arrive at a unified clinical picture of the disorder by studying the following symptoms:

1. *Emotional deterioration.* The most prominent symptom of hebephrenia is emotional deterioration. This is much more pronounced than in the case of simple schizophrenia. The individual is indifferent to anything in his environment that would arouse an affective reaction in a normal person. On the other hand, for no apparent reason, he is likely to burst forth with a sort of silly laughter. This symptom is what is called intrapsychic ataxia; that is, there is a lack of coordination between the intellectual and the emotional

life. Inappropriate laughter and silliness are two of the most regularly found characteristics of hebephrenic schizophrenia. Kant (41) has suggested that it may not be as inappropriate as it seems, if laughter can be considered as a relief from tension; in the schizophrenic's case the tension has grown from a feeling of complete frustration aroused by his insurmountable difficulties. He indulges in a sort of grim humor because of the bewildering and bizarre elements of the frustrating situation.

This type of emotional reaction makes an observer feel as though he were in a different realm. This we may call a lack of empathy, a lack of ability to "feel oneself into" the situation of the patient. This lack of empathy is no doubt caused by the fact that the patient really *is* living in a different realm. The process active in a hebephrenic is a withdrawal from the realities of life, a hiding within himself. The patient builds around himself a barrier that cannot be broken down by any ordinary means.

2. *Perceptual insufficiency.* In the perceptual field the hebephrenic apparently has a lack of intake. Careful examination will show that he does not lack in perceptual ability, but that he is not interested in what is going on and, consequently, takes in little of it. His attention is centered in his own associations, and he resists any breaking through of stimuli from the outside world. If he happens to be stimulated by something that is in line with his own associations, he is more likely to be cognizant of the stimulus. (Angyal, 1.)

3. *Hallucinations.* Usually the hebephrenic is actively hallucinated in the auditory, visual, and cutaneous fields. The hallucinations are customarily disagreeable in content. Voices are heard calling the patient vile names and accusing him of immoral practices. The patient sees disagreeable scenes and feels himself manipulated by human hands, or imagines strange animals manipulating his body. These hallucinations form no consistent scheme and are often bizarre and extremely varied.

The insistent presentation of these false perceptions aggravates the patient's tendency to guard himself against the inroads from the outside world. For example, we asked a

patient of this sort to sit quietly and gaze into a crystal ball. Immediately, she became panic-stricken and refused to look, covering her face with her hands. We could get from her no reason for her conduct, but it was evident that she was guarding her eyes against what she might see in the ball. The hallucinations are all fleeting, fantastic, and the patient makes no attempt to explain them.

4. *Delusions.* There are likely to be delusions of a silly character, not firmly fixed nor supported by logic. They are merely childish interpretations that should not be present when we consider the individual's background. They, in themselves, do not form a prominent or important part of the hebephrenic personality. They are the interpretations of the one who is too indifferent to his surroundings to be bothered by trying to get any rational explanation of what is happening.

5. *Associational disorders.* The associations of the hebephrenic individual are bizarre and do not seem to follow any logical sequence. They will jump from one idea to a seemingly unrelated one and the person who hears them has not the faintest idea what the connection might be. However, if you get some inkling as to the nature of the person's internal conflict, you can sometimes surmise the relationship of these various incoherent remarks to the central conflict. Hence, the assumption seems to be valid that, while the verbal production is without meaning to the listener, it probably is connected with the central ruminations of the patient. Words are used by the normal person to convey meaning to another. If a person becomes so indifferent that he cares not a whit whether or not the outsider understands his meaning, but simply expresses a chance association with whatever he may be thinking upon, a jumble results. Here, again, we can understand the weird associations of the hebephrenic by reference to his emotional deterioration. He no longer cares whether he makes contact with others or not. Objectively, the associations may be described as incoherent, irrelevant, sometimes stilted and peculiar. The verbal output indicates a poverty of ideas, and often the expressions are so meaningless that they lead to neologizing, that is, the coining of new words.

6. *Conduct.* The hebephrenic's conduct is what would be expected from the emotional deterioration with its guarding against the outside world. The activities are purposeless and often silly. Left alone, the patient will sit or stand for hours in the same posture. Give him a mop and tell him to polish the floor and he will listlessly push the mop back and forth over the same tiny spot for an indefinite period or will gradually stop and stand, quietly holding the mop in his hand. For example, a group of such patients were each given a mop and started on a circular parade, polishing the floor. When some visitors entered the room, the patients paid not the slightest attention to them, but continued their parade. The attendant then called, "Drop those mops," whereupon they with one accord dropped the mops on the spot where they happened to be and then stood there like so many toy men. This illustrated the total indifference such patients manifest to their surroundings.

7. *Regression.* As a description of the withdrawing behavior and the beating of a retreat of the schizophrenic the term regression has a real usefulness. In his cutting himself off from the world he does appear to indulge in behavior that is more appropriate for a less mature level of development than he should have been able to reach. If regression is defined too literally to mean the peeling off of layers of development and maturity so that the person is actually like a child again in every way, the term is highly confusing. The schizophrenic is not a child again; but in reacting to the world about him, in assuming responsibility, in acting as an adult emotionally, and the like, he seems to be going more backward than forward. Cameron (10, 12), Wegrocki (71), and others have made it clear that the thought processes of the schizophrenic are not the same as those of a child, and other observations show that not all schizophrenics behave just as children do. But we cannot escape the fact that on the score of wishing to be dependent on others, of escaping responsibility, and of acting childishly emotionally the schizophrenic has shown signs of regression. This is the most pronounced factor, perhaps, in the hebephrenic reaction type. One schizophrenic woman carried the regression so far that she played simple games, read childish

books, talked with a babyish whine, and demanded the care that a child would claim. She even at one time toddled about the ward of a hospital mumbling incoherent baby talk, whined for what she wanted, and spilled her food as awkwardly as an infant.

8. *Personal disintegration.* The whole picture of hebephrenia may be summed up in the term "shattering of the personality." We say that the patient has regressed to a childhood or infantile level, but this carries with it a misconception. He is not on a par with a child who manifests the same type of conduct that he does, for the reason that the child is preparing to develop, his reactions are learning reactions, he is integrating with each new experience. The regressed individual does not go back to get a fresh start, as some writers have claimed; he goes back permanently.

This brings out a characteristic difference between an hysterical manifestation and the true regression of the hebephrenic. The hysterical person retires into some queer, apparently childish, reaction for a time, but is not content to remain there. In time he will become invigorated for a fresh start. The hebephrenic patient, once definitely regressed, is content to vegetate. He is so enthralled with himself and so fears the world that the world has no attraction for him.

LXXVIII. CATATONIC SCHIZOPHRENIA

This disorder has certain superficial resemblances to manic-depressive psychosis, but in its essential mechanism it resembles to a much greater degree the schizophrenic withdrawal and retreat from reality. There is alternation of excitement and stupor with the latter being much the more predominant. When excitement does occur, it is a much more senseless (to the outsider) and impulsive excitement than is found in the manic. We shall examine some of the symptoms of catatonic excitement and stupor.

336. *Catatonic excitement.* Superficially, the excitement of the introvert may appear similar to that of the manic (extrovert) person. Closer examination will show marked differences.

1. *Emotional reactions.* The emotional life of catatonic patients has no relation to the environmental situations of the moment. For this reason, some observers have said that

their excitement is free from any emotion (Rosanoff, 63). It seems nearer the truth to assume from their conduct that catatonics do have emotional responses but that these are primarily due to visceral tensions which are denied an adequate objective outlet. Whatever motor expression may be manifest is bizarre and meaningless. For example, one patient would walk up and down the floor wringing his hands and repeating interminably: "It is not so. It is not so. It is not so." While this was apparently an emotional response, what was back of it was never discovered. At best it seemed to be superficial, for it could easily be interrupted by irrelevant remarks from the examiner. It appeared to be a sort of automatic, stereotyped acting instead of assuming the overt aspect of a complete emotional pattern.

2. *Senseless activity.* The excitement of the catatonic is wholly senseless and for that reason may be dangerous. The patient will shout, throw himself about on his bed, or go through other wild movements. These are likely to be repeated in the same form over and over again. The patient will rock backward and forward, nod his head, go through fantastic maneuvers with his hands or engage in some other absurd activity.

Often the patients assume an affected or dramatic air. Their gestures, manners, and fantastic dress frequently survive the period of excitement and persist through the quiet periods. . . . Some patients will hop on one foot for months instead of walking; others will invariably respond to all questions by the same phrase; still others will not eat their food without first mixing it up into a disgusting mess; others, again, will walk back and forth on a short path all day long, taking alternately a certain number of steps forward and the same number backward. Such examples could be multiplied indefinitely. Most frequently these peculiarities in the conduct of the patient are purely automatic and remain inexplicable. (Rosanoff, 63, p. 237)¹

3. *Verbigeration.* The patient may repeat the same phrase over and over again.

One patient was asked: "What is that you say to yourself?" He replied: "Locks and keys, keys and locks, locks, keys, keys, locks, locks, locks, keys. . . . You know some of the attendants might get hold of me and punch me. Locks, keys, keys, locks, locks, keys, keys, locks. You know if they was to run across me making too much noise they might hurt me." "What do you say locks and keys for?" "Just to enjoy myself. You know there are times

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when there is nothing doing, and I have to do it to pass away the time, and you might just as well say something as nothing." "What did you say the other night to the students?" "Told them about locks and keys." "What else?" "Myriads of us keep growing in numbers, also in largeness; locks and keys, keys, keys, locks, keys, keys, locks, locks, keys, keys, locks, Myriads of us quick-foot through, ev-er no mat-ter. Locks, keys, keys, locks, locks, keys, keys. Myriads of us ev-er full us as keep lives giant's growths, ev-er lives giant's keeper, ev-er no mat-ter. Locks, keys, keys, locks, locks, keys, keys, locks. Lives giant's wealth, health and pleasures, ev-er no mat-ter." (White, 72, p. 209)

4. *Impulsive acts.* Patients of the catatonic type will suddenly and with no warning commit acts of violence and for this reason are sometimes dangerous. One patient who had been in a stupor for years suddenly jumped from his bed, hit an attendant such a blow that he broke his jaw, then went back to bed and remained in a stupor for another period of years. The catatonic patient cannot be understood, because of his internal orientation, so that one cannot predict what he will do. It is dangerous business to attempt to play with a catatonic.

337. **Catatonic stupor.** The catatonic stupor is not an emotional depression such as we find in the manic-depressive individual. The patient in an introvertive stupor has so retired into himself that he is like an automaton and may be pushed around as one would push a dummy. He presents the symptom that we have described as waxy flexibility (*cerea flexibilitas*). His arms, legs, or other parts of his body may be placed in the most grotesque positions and he will maintain these positions indefinitely. He will repeat automatically what is said to him (*echolalia*), or will imitate what he sees others do (*echopraxia*). Stand in front of such a patient and clap your hands and he will begin to clap and will continue after you have stopped. Say, "La la la la," and he will take it up and carry on until finally it will die out because of lack of momentum, just about the way a freight train might stop with no brakes applied. He operates in much the same way as one of those toy engines that you give a push and that, after a push, keeps going because of the balance wheel in its mechanism.

In the more advanced stages of this stupor the patient will remain absolutely motionless and speechless and has to

be tube-fed. In this condition he often becomes resistive (negativistic) and will oppose any attempt to make him move or act in any manner. Rosanoff (63, p. 241)¹ gives a good description of a patient of this type:

She shows marked negativism. When spoken to she will give no response, showing absolute mutism; she resists systematically all attempts at passive movement; to open her mouth, to flex an extended limb, or vice versa. The command to open her eyes results immediately in a spasm of the orbicularis muscle. Refusal of food is at times complete, and then the patient has to be tube-fed; at other times it is partial, the patient taking only liquid food which is poured into her mouth by means of a feeding cup and which she then swallows readily. One day, without any apparent reason, she ate spontaneously a piece of bread which she took from the table. For two days she thus took bread, cheese, and chocolate, but persistently refused everything else. Later she relapsed into the former state and now takes none but liquid food which has to be poured into her mouth. Her sensibility appears to be normal, but all reaction is annihilated. Painful pricking with a pin causes slight trembling, but no cry, nor any movement of defense. In the stuporous phases the patient lies in her bed, completely immobile. Generally this immobility is dominated by negativism which is manifested by the same traits as those observed in her excited phases. . . . When standing she remains motionless, yet she will walk mechanically as soon as she is pushed. When invited to sit down, the patient slightly flexes her legs and makes a movement as though starting to sit down, showing that the command is understood; yet she will go no further, but remains standing. When taken by the shoulder and slightly pushed, she sits down without trouble.

338. Mechanism of catatonia. From this description it can be seen that the mechanism of catatonia is quite different from that of the manic-depressive disorders. In the latter the defense takes the form of alternately fighting and giving up in despair. In catatonia the patient has fled from the difficulties which precipitated his trouble. He turns from the environment into himself. His resistance is a resistance against any outside impression. When excited, he exhibits an excitement that springs from a subjective source and not from any environmental stimulus. When a catatonic patient is stimulated from the outside, his obedience is that of a machine or a toy.

Catatonia probably represents a most violent attempt to escape from an insistent mental conflict by the use of the most extreme regression. The catatonic excitement results

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from substituting the most infantile form of senseless activity for anything which would approach an adequate emotional expression. When the futility of meaningless activity becomes too apparent, the patient retreats into the stuporous condition which is often so profound that it almost simulates death. This resort to the bliss of oblivion provides a temporary haven from his difficulties and enables him to gain some freedom from the insistence of unacceptable cravings. A study of the ideas of catatonic patients suggests that perverse and tabooed sexual ideas predominate in their conflicts, and that their fear for these subjects leads them to a precipitate retreat.

LXXIX. PARANOID SCHIZOPHRENIA

Chapter IX dealt exclusively with the nature, development, and content of delusions. When delusions predominate the schizophrenic picture, we call the disorder paranoid schizophrenia. We should not assume that the delusional thinking is superimposed on schizophrenic reaction patterns but understand that the syndrome describes a behaving organism whose development has been paranoid-schizophrenic.

339. **Unsystematized nature of the delusions.** Delusions may seem on the surface to make sense, or they may have obvious gaps in the way they are put together. The paranoid schizophrenic has delusions of the latter variety without much relation to clear thinking or reality. We might expect this to be the case since we are dealing with a patient whose personality is more or less shattered, whose emotions have been dulled, who may react as though there were intellectual deterioration, and who tends to withdraw. In many instances the delusions are not only unsystematized but quite bizarre and confused. Such delusions may occur in any of the major psychoses, both organic and functional, but in the paranoid schizophrenic they are the predominating characteristics. All else seems to revolve around them even though they may not make sense to an outsider. Both delusions of persecution and of grandeur are found, but they do not seem to be so expansive or derogatory as in some other conditions. This could be due to the fact that the schizophrenic does not typically react strongly to any affective stimuli.

340. **Development of paranoid schizophrenia.** What we have said about the development of delusions in Chapter IX

and about the background for schizophrenia in this chapter go together in describing the paranoid schizophrenic. Delusions grow in the soil of feelings of inferiority and insecurity; they are attempts to explain away one's own felt deficiencies and failings. We live in a society which puts a premium on having "good" reasons for our conduct, abilities, and character traits, and it is possible to stretch the truth a little bit in proving to ourselves and to others that we are better than we are or that we are not responsible for our shortcomings. But the withdrawal tendencies and the personality dilapidation of the schizophrenic contrive to give explanations that are acceptable only to the person having them, without regard for the rest of the world. He sees no reason for making the delusions sensible to others, and hence they are inconsistent and often bizarre. In the early stages of development, however, it is not hard to see the relation between the delusions and the fears, wishes, and desires of the deluded person and at the same time catch the spirit of the personality disintegration that makes such attempts at compensation ineffective in convincing outsiders. The following excerpt from a letter received by a college professor illustrates this distorted wishful thinking:

You see, I have proof that my family's history can be traced back 2000 years B.C. I claim I am a natural seed of Abraham, of the tribe of Judah, root of David. I am the "woman in the wilderness," the woman clothed like the son, the daughter of Jerusalem to whom the dominion and Kingdom would come. I am the type of woman Jesus might have chosen as his wife, the Lamb's Bride, Zion, God's Temple, His Kingdom or Organization, His Substitute until the Christ child is able to carry the government on his own shoulders. Until such time, I shall be the recipient of God's commands and shall execute them in an invisible, subtle manner. It will all be done through making the right contacts with people God directs me to choose, writing and suggesting ideas which they in turn will carry out.

After a slow onset in which the withdrawal and disintegration are not so prominent as the delusional material, paranoid schizophrenia is likely to progress to the more typical schizophrenic kind of behavior. Both delusions and behavior resulting from them tend to be stereotyped, and the emotional participation in them is at a rock-bottom minimum. Disorganization is evidenced by scattering of thought,

incoherence, apathy, posturing behavior, and many hallucinations.

We shall discuss the paranoid reaction again in the next chapter.

341. **Prognosis and treatment in schizophrenia.** The prognosis in schizophrenia is not too encouraging. Studies on recovery are clouded by differing standards and diagnostic categories used in different hospitals, but it is fairly well agreed that the remission rate in schizophrenia is low. While some estimates have indicated that as many as 40 per cent of the hospitalized schizophrenics improve sufficiently to be called recovered (Silverman, 68), many others restrict the figure to well below 25 per cent. There is general feeling that prognosis is more favorable if treatment is started early after the onset of the disease, but this has not been fully substantiated.

Treatment in schizophrenia depends on the clinician and includes both medical and psychological techniques from shock treatment and psychosurgery to psychoanalysis. Treatment in general will be further discussed in Chapter XVIII.

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CHAPTER XVI

FUNCTIONAL PSYCHOSES: MANIC-DEPRESSIVE PSYCHOSIS AND PARANOIA

Manic-depressive reactions are easier for most people to understand than are schizophrenic. They seem to be more reasonable and to make more sense because we can feel some kinship with a person's being elated or down in the dumps. Both these reactions in mild form are familiar to all of us. Elation and depression may be opposite extremes of the same basic disorder; we do often find both in the same person, although either may appear by itself. People are far more likely to recover, at least for a time, from manic-depressive attacks than from schizophrenic or paranoid attacks. We have been introduced briefly to paranoid reactions in the last chapter. There are not many paranoid psychoses uncomplicated by other disorders, but there may be a few cases whose chief difficulty is one of delusory and warped thinking.

342. Illustration of manic attack. A girl of twenty-two years, of superior intelligence, was admitted to the hospital in an acute manic attack. She laughed uproariously as the ward door closed and shouted, "So you're shutting me up in here for a while; well, don't think you can dampen my spirits. I've just been emancipated." One of her first acts was to try to organize what she called an "anti-patriarchal society" among the patients. She was quite enthusiastic about the possibilities of proving that fathers were not as smart as their daughters. She was thoroughly confident that such was the case and was disappointed that she did not have a large following among her fellow patients. She stormed at many of them for their stupidity and poor judgment, but soon forgave them all and tried to solicit their aid in forming a glee club; she demonstrated how she could sing and then propounded the merits of the hospital and what a wonderful place the world was after all. When a male attendant happened to come into the ward, she cursed him with a vengeance, saying that he reminded her of her father who was a good-for-nothing hypocrite; before her anger had much chance to cool, she declared that she had been emancipated

from her father's domination, however, and had proven her superiority, that after all men did need women around to comfort them, whereupon she grabbed the attendant around the waist, forced his head on her shoulder and began caressing him. At times, she appeared very dramatic, acting out scenes she remembered from her dramatics class in college, making up lines, and sometimes saying them so fast that they were unintelligible; sometimes also her language was almost incoherent, but one could easily detect its affective intent. She seemed pressed all the time to be active and to be gay and particularly to tell the other patients what to do "in order to be helpful to them."

Her history revealed no important physiological findings or significant diseases. She was one of three children in an upper middle-class home where she had had more advantages than most children. She was never denied any reasonable request for money, but always had to give a strict accounting for what she had spent, often suffering severe rebukes in the form of "fatherly advice" for the way in which she had shown such poor judgment in the use of her money. When she was nine her mother had separated from her father; little was known of why the separation occurred, but the patient felt that her mother had deserted the family, although she resented bitterly her father's comments to that effect, especially when he would tell her that she was too much like her mother. The father remarried, but the patient and her stepmother were never close to each other. Training in the home was always strict although the father pretended to have family "council meetings" to determine policy; somehow his views always seemed to predominate. He took many occasions to impress his children at adolescence that they were young and inexperienced and must depend on him for advice since his experience was so much greater, and he was therefore so much wiser. He provided the physical and material comforts his children needed and was superficially a "good" father but actually also rejected them when they did not live up to his predetermined ideals for them or did not show proper gratitude for all he did for them. All of this the patient resented, feeling that she was being rejected and then feeling guilty that she ever thought thus of a fine

and loving man like her father. She vacillated between wanting to be angry with him and being grateful to and sympathetic with him. She particularly felt hemmed in by her financial dependence on her father during her college years when he was especially critical of her every decision and judgment. In college she had been somewhat moody but primarily an activities girl, losing herself in all kinds of projects and being the pal of all her friends; actually she often felt lonely and left out of things, but she buried most such feelings in more activity and confident good humor. Nevertheless, her work suffered and she was asked to leave college during her senior year. She seemed to expect this break and immediately set out to get a job, which she did with little difficulty. Her first reaction was one of optimism and confidence in herself and great rejoicing that she was no longer dependent on her father. She felt quite guilty at having these feelings, especially when her father became ill. She did her best to be a dutiful daughter and went to see him regularly until his death. It was at this point that her manic excitement became severe and she began talking about being emancipated.

LXXX. MANIC-DEPRESSIVE PSYCHOSIS

There is a healthy controversy about whether manic and depressive reactions are the extremes of the same kind of psychopathology or whether they should be considered separately. We shall follow the usual pattern set down by Kraepelin and treat them as basically the same disorder with different manifestations. It is second only to schizophrenia in incidence as a major form of abnormality, but remission is much more frequent than in schizophrenia. Melancholia is often used synonymously with depression although it may be restricted to mean the symptoms of sadness appearing with other symptoms which together make up a depression.

343. General characteristics of manic-depressive disorders. In the schizophrenic disorders, we have studied individuals who adopt rather definite forms of adjustment which become habitual. There may be recurrent periods in all of these, but with added stress the person tends to revert to the same mechanism of defense each time. In the manic-depressive reaction, on the other hand, the individual goes from one type of response to another of a diametrically

opposed sort. This may be one reason why the disorders of this type are more benign than the former ones. The fact that the individual does not have one fixed type of defense makes it easier to help him to adjust; he can readily be induced to change from one type of defense to another because his reactions are so unstable.

Manic-depressive disorders are so named because they involve alternations between two conditions that are the extreme opposites of each other. This does not mean that all patients show both phases, as we shall see in the discussion below. In the condition of mania an individual is very active in the motor realm, his mental processes are quickened, and he is emotionally excited. In the depressed condition he is slow in his movements, retarded in his intellectual operations, and emotionally depressed. These two diverse swings in motor, intellectual, and emotional activity may be viewed as exaggerations of what is found in normal individuals.

344. **Degrees of mania and depression.** Every individual has oscillations toward mania and toward depression, but as long as these swings are not extreme and not too rapid the person is considered normal. If we let the two horizontal lines of Figure 16 represent the boundaries of the normal

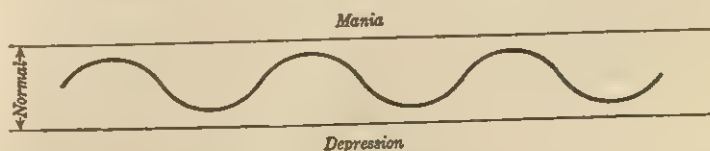


FIG. 16. DIAGRAM TO ILLUSTRATE NORMAL EMOTIONAL SWING

The space between the two horizontal lines represents the range of normal emotional swings between elation and depression. Distance from left to right represents the flow of time. The curved line between the horizontals shows how emotions may swing over a considerable range and still not pass these arbitrary limits of normality.

range and movements from left to right represent the flow of time, the wavy line between the boundaries would indicate possible changes in a person's emotional reactions as he moved along through life's successive experiences.

Any breaking across above or below the lines (which, of course, are artificial and arbitrary boundaries whose exact position cannot be determined in any case) would indicate

abnormality. Since, in abnormal cases, the extent of deviation above or below the border lines may vary, it has been customary to attempt to distinguish these degrees. They are represented in Figure 17. The mildest degree of mania is called hypomania. The next degree is acute mania, and the most extreme form is hyperacute mania.

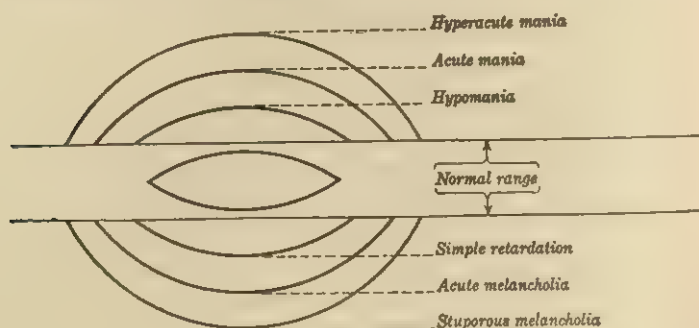


FIG. 17. DIAGRAM OF DEGREES OF EMOTIONAL SWINGS

Any swing which does not pass the horizontal lines may be considered normal. Above the boundary we may distinguish three degrees of emotional elation. Hypomania is the mildest, next comes acute mania, and the extreme degree is hyperacute mania. Below the boundary are also three degrees: simple retardation, acute depression, and depressive stupor.

The depressions are classified in order of severity: simple retardation or mild depression, acute depression or melancholia, and depressive stupor.

345. **Sequence of mania and depression.** The actual form of the life pattern that one follows in relation to successions of mood may be quite varied or quite stable. Some persons seem to follow a straight course, remaining midway between the boundaries. Most persons vary somewhat as a reaction to the different situations that confront them. If the changes are a response to environmental conditions, they are not likely to form any definite or regular sequence. In some cases of mental disorder the changes seem to come irrespective of stimuli that would ordinarily be considered adequate to cause mood variations. Even in these cases it is the exception to find any definite sequence. Different types of mania and depression (or melancholias) and combinations of both have been segregated, but the student should be warned against the idea that they come in any regular

sequence or that the presence of a rhythm in the past forecasts any continuation of such rhythm in the future.

Where the person has repeated spells of mania with no abnormal development of depression it is called recurrent mania. This sequence is illustrated in Figure 18. Where there

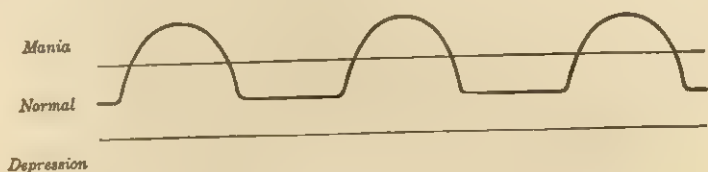


FIG. 18.

Diagram of recurrent mania.

are repeated spells of depression with no abnormal manic attacks it is called recurrent depression. This is illustrated in Figure 19. In many instances the individual swings from

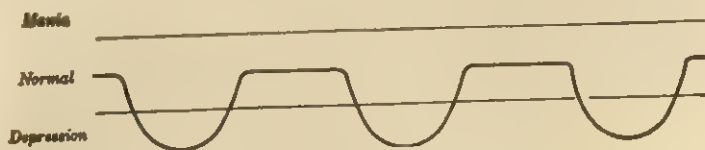


FIG. 19.

Diagram of recurrent depression.

mania to depression. Some types of successions of this sort are illustrated in Figure 20.

Observation of one's self as well as of others will enable one to discern the mood line of most individuals. Some may fluctuate only within the normal limits. The mood line of others may tend to fluctuate about the manic side; these individuals are happy, hilarious, active, and somewhat volatile. Others tend toward the depressed area, and upon the slightest provocation become dejected and quiet.

346. **Description of mania.** The dominant characteristic of mania is excitement. This excitement expresses itself in the emotional realm by hilarious good humor, excess irritability, and responses of an extreme emotional sort to mild stimuli. It carries over to the motor realm so that manic individuals are continually doing something; such as running about,

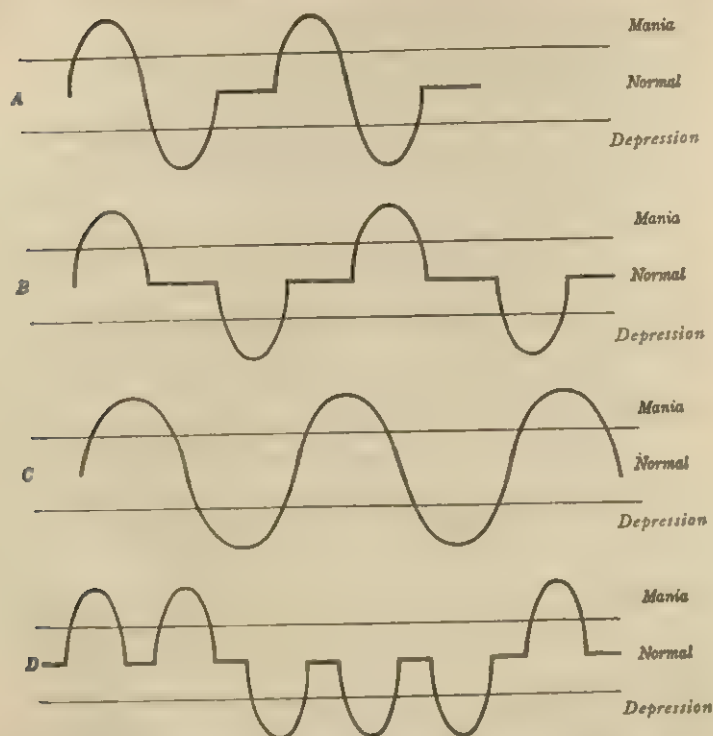


FIG. 20. SCHEMATIC DIAGRAM OF VARIOUS SEQUENCES OF MANIA AND DEPRESSION WITH NORMAL CONDITIONS

- I. Mania — depression — normal — mania — depression — normal — and so on.
- B. Mania — normal — depression — normal — mania — normal — depression — normal.
- C. Mania — depression — mania — depression — mania.
- D. Normal — mania — normal — mania — normal — depression — normal — depression — normal — depression — normal — mania — normal.

dancing, waving their arms, and so on. They are incessantly talking, and from all appearances their thought processes are unusually rapid. They simply cannot sit still.

That they are in close touch with their environment is shown by their extreme distractibility. They are diverted by the slightest stimulus and flit lightly from one subject to another. This contact with reality is further shown by their response to people. They are quite aware of the presence of strangers and will "show off" in great style when people are watching. This is quite different from the schizophrenic

type of activity that we learned about in Chapter XV. For example, if an extremely manic person is shown to a class, it can almost be predicted that he will select some individual in the group and make personal remarks either to him or about him. Such remarks are usually quite pointed and may be complimentary or the reverse, such as: "Isn't she a pretty girl? I like you. You are the meanest man I ever saw. I hate you. Where did you get that pretty tie? Is that girl married?" and similar comments.

The observer sees, in all this manic excitement, a person pressing himself to have a glorious time. The patient has thrown off inhibitions and is doing what we might be doing if there were no social restraints upon us. Attention is spontaneous, flitting from one situation to another without control. Ideas flow freely with no attempt at logical sequence and furnish good illustrations of true *free association*. The patient is likely to pray one minute, swear the next, sing the next, and sob after that. In all this the observer does not feel that the patient is very far away from reality. He tends to have some sympathy for the patient, because he can easily imagine himself doing the same things if he made no attempt to control himself.

Let us examine the different degrees of mania.

1. *Hypomania*. In the mildest form of mania, known as hypomania, the most significant symptom is a marked restlessness. This may show itself in continual activity. In some cases this activity is useless, in others it may result in marked productiveness. An example of the former is the person busy-ing himself about his room. He will make his bed, empty his bureau drawers and repack them very carefully, clean the floor, then begin to remake the bed, repack again his bureau drawers, clean the floor, and then begin all over again.

One woman of this type began to clean the house for company that she was expecting in the evening. In the course of her cleaning she found some dust under the front cover of the piano, and removed this part of the piano so as to make a thorough job of her cleaning. Having removed the cover, she found that she would have to take off another section, then another and still another. This continued until,

in the evening, when her husband returned home, he found her in the front room with pieces of piano strewn all about the room. She was still engaged in cleaning the piano!

In other cases simple hypomania may drive the individual into activities that are of value. A person of this type in such periods, can, because of the diminution of critical control, make a better speech, write a better book, or construct a better article than he would were he more inhibited. In fact, his associates may feel that his behavior in a hypomanic state is an improvement over his former actions. He may not be so retiring, may enjoy life, and may be better company. This makes the manic aspect hard to detect until the patient shows a tendency to undertake more than he can complete, to get sidetracked with poorly thought-out projects, and otherwise to show poor judgment in his press of activity. He is also likely to become domineering and irritable, trying to show everyone that he can do things better than others. Many cases of hypomania never are hospitalized, and remissions occur without hospitalization or even medical assistance, but there are real dangers to health, reputation, and the patient's future which should merit medical guidance (Cameron, 9).

2. *Acute mania.* In acute mania the excitement is more marked. The patient makes trouble for himself and others by his violence and usually has to be taken care of by those who can control him. The illustration in the first part of this chapter is a case of acute mania. A very common characteristic of this condition is fitting every stimulus into the central dominant ideas of the moment. People will be misidentified. The slightest resemblance between a stranger and a loved one will precipitate a caress of the stranger by the patient. It is not an unusual occurrence for such a patient to rush up to the physician, throw her arms around his neck and cry, "Oh, my long-lost husband!"

In spite of the acute manic's excitability and distractibility rapport is usually good; he is not out of touch with those around him, and his actions can easily be imagined as the result of throwing off inhibitions, i.e., they are not bizarre and completely incomprehensible. He may try to dominate everyone and push people around, becoming angry and scorn-

ful when crossed. His rage may take the form of throwing things, breaking furniture, and otherwise showing how strong he is. Or it may take the form of obscenity, cursing, sarcasm, and making those around him uncomfortable. Obscene and vulgar words and gestures are not limited to angry episodes; many patients are overly erotic and show no inhibitions about their amorous desires. Such irritability and lack of regard for social and moral customs often make the manic patient the target of retributive treatment. An understanding of the fact that he is reacting to a serious conflict situation in which feelings of rejection may be prominent might help us to see that he is not likely to improve with such treatment. He may be thrown even more on the defensive.

Intellectually, we may find a lack of judgment but no real or apparent deterioration. Thinking seems speeded up due to the rapid flow of language in which there is flight of ideas but little real incoherence except that due to rapidity of speech. Delusions are frequently prominent, especially those that fit in with the patient's dominant mood; these are more likely to be delusions of grandeur than of persecution, with dominant and erotic activities. Whatever hallucinations are necessary to the patient's carrying out these thought processes may appear but they are subordinate, not dominant.

3. *Hyperacute mania*. In hyperacute mania the patient becomes very violent. He may become destructive, fight those who seem to oppose him, tear his clothing, throw furniture, and act like a wild beast. The excitement may be so great that he will not take time to eat. Food placed before him is thrown about like the other things that come in his way. If the excitement takes the form of anger he will at times become dangerous, but it is an excitement that is just as dangerous to himself as to others. He will tear out his hair, bang his head against the wall, and injure himself in various ways. Lack of rapport and disorientation is so great that the patient passes into an actual delirium which is more real to him than is his objective environment.

The characteristics common to all degrees of mania are (1) emotional exaltation, (2) increased activity, and (3) acceleration of the flow of associations.

347. **Description of depression.** The depressions are just the reverse of the manic attacks. The patient becomes stuporous, lacks activity, is slow in his thinking, will not talk, and will sit around for hours at a time in the most utter dejection that can be imagined.

1. *Simple retardation or mild depression.* The mildest form is that of simple retardation. The patient may explain that he has had trouble of some sort. Often there has been no real cause for sorrow so he will invent one. He will cry at times or merely sit in a state of dejection. Ask him a question and he will answer, but slowly, with indifference, and in a low voice. At other times he will merely sit with folded hands and do nothing. He is incapable of effort of any sort, will not read, and will not work. In short, the person acts as though there were nothing in life worth while. It is not unusual for a bereaved person to enter a state of this sort and to continue as in a daze, for long periods.

Urging retarded patients to buck up, changing their environments, and keeping them entertained may help in mild cases, but it may also make them feel more and more that they are not worth the effort expended on them and give them the feeling of further insecurity in knowing they must be made special cases. While the danger of suicide is not so great in this group as in acute depression, it is always a possibility. Cameron (9) warns that we must not reassure ourselves with the unfounded belief that if a person repeatedly threatens suicide he will not carry out his threat.

2. *Acute depression or melancholia.* The emotional depression in acute melancholia is more pronounced. A marked symptom is the increased slowness of response. If a question is asked, the patient will sit as though he did not hear, but if the questioner is patient enough he may finally give an answer. By actual timing such patients have been found to wait as long as two minutes after a question is asked before replying. One feels that they did not hear, and the answer, when it does come, is somewhat of a surprise.

They may sit and weep for long periods, in some cases accusing themselves of all sorts of absurd things. They will state that they have sinned, but when questioned as to the sin they are often unable to give any coherent explanation

that would account for the extreme depression. Delusions of self-accusation and nihilism are common. Especially are there delusions relating to the digestive system. The stomach may be missing, there may be no bowels, or the patient may not have had an evacuation for weeks or months. Actually, there is likely to be some constipation and not infrequently patients have to be reminded to chew their food or to eat. Patients also suffer from vague aches and pains, hypochondriacal complaints, being just miserable all the time. Danger of suicide is very real, and careful steps must be taken to guard the patient from taking his own life.

3. *Depressive stupor.* In this extreme condition the patient loses all contact with his environment. He becomes unconscious of his surroundings, must be tube-fed or he will die of starvation. He cannot be made to speak at all and is totally unresponsive.

348. **Are there physiological correlates of manic-depressive psychosis?** The only findings to answer this question in the affirmative seem to be *results* rather than *causes*: results of a way of living. Lewis (25) found that in eight cases studied on autopsy there was some tendency to find enlargement of the heart and vascular system and perhaps some enlargement of the various glands of internal secretion. Strongin and Hinsie (44) report that the parotid gland does not secrete saliva properly in depressed patients, and it is well known that many depressed patients complain of a dry mouth. There was no appreciable increase in saliva in manics, however, as one might expect. Henry (18) thought he noticed differential motility in the digestive system in manics and depressed patients, the depressed ones taking longer to evacuate barium meal. Nearly all other studies indicate little difference in the physiological functioning of manic depressives from the normal. There may be variations toward extremes in such functions as the endocrine gland secretions, metabolism, and production of blood sugar or calcium, but they are still within the normal range. These negative findings do not mean that we shall never find any physiological basis for the manic-depressive states, but at present none is known. It is also quite possible to understand them as of psychogenic origin.

349. Frequency and duration of attacks. The great majority of manic-depressive patients experience their first attack between the ages of twenty and forty-five years.

From about one-third to three-fifths of the patients experience no recurrence of the disease after the first attack has passed. A study of 1703 manic-depressive admissions to the New York State Hospitals shows that 57 per cent had but one attack, 22 per cent had two attacks, 11 per cent had three attacks, and 10 per cent had more than three attacks. (Pollock, 38) Hence, the outlook for a permanent recovery is very much better for the manic-depressive patient than it is for the schizophrenic.

The average duration of hospitalized cases is about a year, but for extramural cases, the attacks average about four to six months in length. There is a tendency for the duration of attacks to increase with advancing age. Those having recurrent mania have a better chance at recovery than those with recurrent depression, and mixed types have the best chance of all.

Because of the episodic nature of the disease and because of the more favorable outlook for recovery, manic-depressive patients comprise a relatively small proportion of the hospital population. Different studies find the percentage of such cases in the total hospital population to range from 2.5 per cent to 16 per cent.

350. Interpretation of manic-depressive disorder. Kraepelin formulated the concept of manic-depressive insanity as a definite disease entity. His main reason for so doing was that both the manic and the depressed phases appeared in the same individual. The fact that a person can rapidly swing from a manic to a depressed condition made him feel that the two phases were related. As a matter of fact they are related; they are diverse expressions of the same mental struggle that the patient is experiencing.

1. *It is a defense reaction.* We have seen how the hysterical patient escapes his difficulties by adopting some trick; he diverts his own attention and the attention of others from the main issue to the symptom of some physical disorder, which disorder, in reality, may exist in a mild form, or may not exist at all. In the schizophrenic disorders we found that

the person escapes by retiring into himself. He refuses to fight and so seemingly wins his battles.

In the manic reaction we find an individual who tries to solve his troubles by a vicious attack upon the things that seem to be causing them. He cannot adopt a subterfuge, he cannot retire into himself, he cannot substitute something else, so he makes a direct attack and backs it with all the emotional fervor he can muster. He may not win, but the very fight is a relief. If it only impresses him further with his weakness by leading him to greater defeat, then he may go into the opposite state of depression. He gives up with just as much excess as he fought.

White calls the manic phase a "flight into reality." He says (47, pp. 154-155)

The great activity can be understood as a defense mechanism. The patient appears, by his constant activity, to be covering every possible avenue of approach which might by any possibility touch his sore point (complex) and so he rushes wildly from this possible source of danger to that, meanwhile keeping up a stream of diverting activities. He is at once running away from his conflict—into reality—and trying adequately to defend every possible approach. On the other hand, a study of the manic productions will disclose the fact that they refer to, they reanimate, so to speak, longed-for situations of the past, the memories for which have been repressed. So in this sense the mania is an ambivalent (having a dual force or aspect) reaction, rushing into reality on the one hand but on the other developing, under the cloak of the hyperactivity and flight of ideas, a wish-fulfilling drama in which the forbidden thoughts come to expression.

2. *It is the breaking forth of pent-up emotions.* The person has restrained himself so severely that the manic attack can be viewed as a breaking forth of the emotional urges he has not permitted to appear openly. This breaking loose of emotional life acts as a purgative after which the patient feels greatly relieved; fitted, so to speak, to start all over again and put up another fight until things again become unbearable. The depression is a submission to the overpowering feeling of chagrin at one's helplessness in the face of urges that apparently become too strong for resistance. When one has tried and feels that he is failing, it is often a relief simply to give in for a time and admit that one is worsted. The hopeful thing in these cases is that both of these extremes are usually temporary. The surrender is a partial

one that provides a period in which to recuperate, a period of preparation for the next struggle.

3. *It seems to be closely related to normality.* Because it seems so logical that the manic-depressive patient should come from the extroverted sort of personality, we have often assumed that he does. It is not surprising that some studies have affirmed our assumption when marks of extroversion are frequently taken from symptoms of the manic individual! Case records and questionnaires have not always corroborated the etiology of this disorder in the extroverted personality; many patients seem to have been more nearly in the middle of the extroversion-introversion continuum. The same may be said for the cycloid sort of personality in which patients showed swings from elation to depression within the normal range. Many manic-depressives come from such previous personalities, but many do not. Predisposing factors, which will predict that a person will develop manic-depressive psychosis, seem very difficult to find.

351. Prevention of recurring attacks. The period of normality between attacks has been utilized to help the individual to adjust to his troubles in a different and better manner. He cannot be made to adjust when in the midst of a manic or depressed episode, but when he is able to look at things rationally, an analysis of the total situation may be accomplished. If an adjustment is effected, any future attacks may be forestalled.

These cycles do not come suddenly in the life of an individual as out of a clear sky. They usually show a history of minor cycles of mood out of proportion to the environmental causes and indicative of a possible later and more severe break. Those in charge of children can, by observation, discern manic-depressive tendencies and should attempt to discover some underlying reason, not at first apparent, for their maladjustment. The tendency has been to ignore children of the manic-depressive type and to be content with labeling them "unstable." A minor instability is a sign of a minor lack of adjustment. If teachers could help these children to a different and better type of adjustment, it is certain that many cases could be kept from our hospitals.

Such preventive work would likewise relieve the conflicts of a large number of persons whose maladjustments are not serious enough to demand hospital care but who, without proper guidance, are doomed to live tense and often very painful lives.

Sometimes the incipient sign of these cases is not a minor alternation in mood, but too much poise. Too much control, as shown in such extreme poise, is often evidence of undue repression of spontaneity. It is a bad sign when a child is so afraid of himself that he dares not let out a hilarious laugh when occasion warrants it or give vent to a good cry when such a cry would be a relief. Most of the trouble springs from too much emphasis upon emotional restraint. Find a suitable way in which a child can express his emotions, teach him to get an outlet in this direction and he will not be so likely to go to peculiar extremes.

352. Involutional melancholia. Closely related symptomatically to the depression of manic-depressive psychosis is involutional melancholia. This psychosis occurs in the absence of previous psychosis between forty and sixty-five years of age, usually later for men than for women. The incidence is also greater in women than in men. The age at which it occurs is the same as that for the "change of life" when men and women reach the climacteric. There has been a great deal of searching for a direct physiological or chemical connection between the psychotic behavior of involutional melancholia and these endocrine and other changes normally occurring in all people during late middle age. No such direct relation can be found, however, there being no physiological changes in involutional psychotics not found in normal people going through this change of life. Rather we have to depend on an explanation in terms of psychological reactions to the climacteric and all its implications of lowered vitality, diminished sexual power, and less to look forward to. Add to these personal losses the worries that a person may have about money, health, and prestige, and he may become psychotic. There is no real agreement among authorities about the etiology of involutional melancholia, but there are certain common characteristics.

1. *The patient is depressed.* He may show all the symptoms of depression mentioned above except that he is not likely to be retarded. Life is not worth living, the world is a rotten place, and man is not worth his salt.

2. *The patient is agitated.* Fears and anxieties about both the past and future haunt the patient. He is restless and irritable, can't sit still, and at the same time complains he hasn't the energy to move about very much, although he may actually tear at his clothing, bite his fingernails, wring his hands, and pace the floor. Speech is also agitated with frequent crying out, tears, and wails, relating to the patient's imagined ills, to past misdeeds, or what will happen to himself or his loved ones.

3. *The patient is deluded.* Particularly important are hypochondriacal delusions and those with nihilistic content. Patients are sure their bowels are clogged, that they are full of toxins or infections, and that they are ill because of past misdeeds or sins. A note of egocentrism enters the picture since so much of the thought of the patient is directed toward himself. All his ills he may take in the spirit of a complaining martyr. He is sure he deserves it all and is loud in his self-accusations, although sometimes delusions of persecution are also prominent. He seems constantly afraid of what will become of him or his friends and relatives and broods over what he should have done in his past life, or what might have been. We have described some of these delusions of self-accusation and persecution in Chapter IX.

4. *The patient may try to commit suicide.* Suicide attempts are quite common among involutional melancholics especially since they seem—to themselves—to have little life left to them, anyway.

LXXXI. PARANOIA

Paranoia is the psychotic overspecialization in delusional thinking and acting in an otherwise non-psychotic individual. In terms of incidence it is not nearly so important as the other major psychoses, probably no more than $1\frac{1}{2}$ to 2 per cent of the first admissions to mental hospitals being paranoid. The background and nature of paranoia are not essentially different from the same kind of behavior as seen in paranoid schizophrenia: both are attempts to adjust to conflict situations by projecting, rationalizing, and compensating. In the one this is the chief behavior; in the other there are further signs of psychosis. The word

paranoid is usually used to refer to the delusional behavior wherever found, and the word paranoic is restricted to describing the person who is diagnosed as suffering from the psychosis, paranoia.

353. **An illustration of paranoia.** A quiet, respected druggist appeared before the county attorney one day to ask protection from the threats of a local businessman with a somewhat shady reputation. He said that he had filled a prescription for the man a while previously and the fellow had not followed the directions but took an overdose which almost cost his life. He was very hateful about the incident, according to the druggist, and blamed him for ever filling a prescription that was so powerful, and threatened his life. The druggist asked that the county attorney investigate the case quietly because he wanted no publicity, and the man couldn't be in his right mind anyway. He then confided much the same story to several friends, pointing out that the businessman had always disliked him and was now determined to get even. Those who suggested that the man couldn't be serious about threatening his life were challenged with a great deal of convincing evidence. For a while many people believed the story until it was learned just what the businessman's accusations actually were. He had entered the druggist's shop shortly after his illness (which had occurred from an overdose of medicine) and slapped the druggist on the back and remarked, "Any guy who would sell a man something he could kill himself with ought to be shot." Others who heard the remark reported it was obviously meant as a joke and a way of poking fun at himself for showing such poor judgment.

Investigation into the background of the patient showed no physical findings of pertinence. As a child he had been considered "different" and one who liked to play his own way or not at all. He was quite sensitive to the opinions of other children but retreated or became domineering when he was criticized. In pharmacy school he did good work but was never considered a social mixer. He seemed very much impressed by the statement of a professor that a pharmacist must recognize when he is losing his powers of attention to detail and motor control. He had lately imagined he was no longer as keen as he should be and had hired a younger

pharmacist whom he praised but whose efficiency he secretly resented. He had also had marital difficulties, always being afraid he could not keep his wife happy and saying he couldn't blame her if she found other men stimulating. He had on occasion been a bit suspicious that she had done so but complained only to a few close friends. In his shop and at home he was a very methodical person, described as set in his ways.

354. Systematized delusions characterize the paranoid.

The delusions of the paranoid are the ones which sound so reasonable that we are inclined to feel that maybe the person is right. In fact, we may not recognize the delusions as such on casual acquaintance with the paranoid. Since he shows no signs of mental deterioration and is quite well in touch with his surroundings, we do not find incoherences and gaps in his logic so evident. He works out very carefully the plot and the reinforcing incidents that back up his story. We can wink at and understand some misinterpretations and cherished beliefs, such as the lovers' blind spots, the salesman's confidence in his product, and the dullard's finding evidences that he has been discriminated against. We may believe these interpretations ourselves, or at least we don't try very hard to resist such beliefs. And even if we do object, the prejudiced one does not go out of his way to prove he is right and feel compelled to convince us all over again every time he sees us. The paranoid inflates his misinterpretations all out of proportion and then is methodically sure to take every opportunity to defend his position. We get the impression that he keeps looking for evidence to prove not only to others but also to himself that he is right—and this may very well be the case. By clever manipulation he keeps only the evidence pertinent to his own beliefs before himself and others and reinforces his position systematically. He frequently persuades by such arguments as, "Didn't you say this?" "Didn't he say that?" "That proves I'm right." The statements may be true enough but the conclusion reached is false. (Landis and Bolles, 23)

355. Delusions of persecution and grandeur are common.

Delusions of persecution are the most common ones and often, but not always, precede delusions of grandeur. Both

of these were described in Chapter IX; here we shall show one typical way a paranoic can "reason" that he is both misunderstood and superior.

At first it is quite probable that the child regards hindrance from others as more or less accidental, the result of the ordinary give-and-take of social contacts. Shortly, unless the child is properly treated, this explanation becomes inadequate. When he blames others, he is really confessing that he is incapable of meeting his difficulties. A more satisfying view would be that he is really a genius, a fact which others should recognize. From this it is not difficult to develop the notion that others do recognize his superiority, a fact which makes them afraid and jealous of the power of the genius; a feeling to which they react by plans to keep him from using his great powers to the fullest extent. By such poor logic the subject not only can keep his self-esteem, but views his failures as evidence that others are persecuting him because of their fear of him. If these people are bent on persecuting him they are frankly admitting their fear of him. What better proof of his superiority?

Delusions of persecution have long been regarded as errors in reasoning or errors in judgment. As long as they were so regarded, they were considered incurable disorders. As a matter of fact, they are not errors of reasoning at all. They indicate a type of reasoning which is far too subtle for the ordinary individual, and it is because of this that they form such a powerful weapon for the subject to use. All who observe him are sidetracked into a critical estimate of his reasoning ability, a thing about which he is little concerned, and pass over unnoticed the thing he is hiding, namely, his feeling of inferiority. Remember, if you hear a person complaining that another is persecuting him, even though there may be some truth in the story, the reason for the complaint is not primarily to get the other person punished, but to convince the bystanders that the accuser is important enough to merit such persecution.

We all recognize this principle when a little child, caught at some prank, says that someone else made him do it. We do not, because of such an excuse, begin to examine the reasoning ability of the child, or even spend much time trying

to ascertain the extent of another's influence; rather we try to teach him to adjust to his own mistakes without blaming them on others. Why do we not, when we find the same thing in an adult, use the same methods?

The fact of importance is not that one has enemies; it is what one does about it. Everybody in this world is injured more or less by others. Such injuries are inevitable. As one person has phrased it, "This world would not be such a bad place in which to live, were it not for the people." Some of this abuse is intentional and some accidental, but it makes no difference what the motivation may be. The significant thing is how we behave under adverse treatment. Proving that the other person had a malicious motive is a poor method of compensating for our failure to face our difficulties. It is easy to criticize but the better plan is to learn from the foibles of others how to integrate better and to enrich our own lives.

356. The paranoid's relations with others are disturbed. Cameron (8) has recently directed our thinking about the paranoid's distorted beliefs into an examination of his social relations, which are highly important. Not only does the patient project and compensate; he also develops a special role for himself—and this development is defective in that he sees himself and others in a false light. In his imagination he sets up a relationship between himself and other people which is not at all true to facts but for which we have seen he finds all kinds of confirmation and believes is the correct one. In this way he builds a pseudo-community populated by real people, with fictitious motives and actions, however. Because he is looking for certain meanings in what others do, because finding them will prove him correct and divert attention, and because he cannot face the real issue, he has no trouble in reading false meanings and emphasizes into most situations. The attitudes of friends toward his beliefs and the prevailing opinions of other people have no effect in mellowing his convictions, as is true with the normal person's misinterpretations when he interacts with others. The normal man is careful to check his ideas and opinions against those of other people and authorities and thus gain perspective, but the paranoid suffers from an inability to change his perspec-

tive once it is formulated; his defective perception of his own role in a social grouping makes his entire social perspective inadequate.

Miller's (29) study of 400 paranoid and paranoic patients revealed that this defective social outlook does not spring full-blown. Many of the patients showed seclusiveness, shyness, inability to accept discipline, temper tantrums, and compulsive traits, all of which tend to isolate the individual and allow a rich phantasy life. Miller's subjects are not limited to paranoics, however, and we cannot draw conclusions specifically for them from this study. But others, drawing on clinical experience, give much the same picture of a rigid person who cannot make concessions or accept corrections and who is markedly sensitive about what others may be thinking. (Meyer, 31)

Another very common characteristic of paranoics is a background of sexual difficulty. Freud spoke of this as primarily homosexual, but there seems to be clinical evidence that it need not be restricted to homosexuality. (Cameron, 8) Sometimes the conflict seems related to the real or fancied dwindling of sexual power or to tensions caused by a strong sexual desire in the presence of a rigid, strict moral code. Miller's (29) study revealed a very large percentage of marital and sex disturbances in his group of paranoids and paranoics. He does not jump to the conclusion that these difficulties *cause* the paranoid trend but that they are too significant in the background to ignore.

357. Paranoid conditions or states. True paranoia is rare, but the reader must have been impressed with the fact that many of the symptoms we described could be applied to acquaintances and friends and also to many abnormal patients other than paranoics. If we do not demand the systematization of the paranoic syndrome, we can find the paranoid trend in many people. Some authorities feel we would do better to avoid the term paranoia entirely, since it is so rare, and deal with the paranoid syndrome, wherever found, whether in almost pure form or as a part of a larger syndrome as in schizophrenia or manic-depressive psychosis. The term paranoid condition is also frequently used to describe a large number of difficult, rigid, sensitive persons who are not

psychotic or deteriorated, but who do hold such firm, false beliefs as to be deluded.

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CHAPTER XVII

PSYCHOPATHIC PERSONALITY AND SEXUAL ABERRATIONS

LXXXII. PSYCHOPATHIC PERSONALITY

After we have discussed the psychoneuroses and psychoses, we are left with a group of people who are definitely abnormal, who present many of the characteristics of other disorders, and yet who in some ways seem to be different from them. No one has successfully set up a syndrome for this group which will positively separate it from others. Rather it is a definitely maladjusted group which will not fit into any other well-defined category and is designated by the term psychopathic personality, or constitutional psychopathic inferiority. People put into this classification are unable to make an adequate social adjustment, and their main difficulty seems to center around an inadequate or erroneous philosophy of life.

358. **Varieties of psychopathic personalities.** It is practically impossible to give a succinct description of psychopathic personalities, because in this group are included all those persons who are too queer to get along successfully in society, but who are otherwise normal. Furthermore, we all vary so widely in our judgment of success that a man who seems very queer to some of us may be lauded by others who take a different view of his activities.

Some merely seem to lack good judgment. They will get into some sort of social difficulty, will be helped by well-intentioned friends, only to repeat the performance or do something equally senseless. Offhand, we should say that they lack intelligence, but they will often be found normal or even superior when rated by a standard intelligence test. They seem to be lacking in social intelligence.

Others will go off on one particular tangent and become the well-known cranks and freaks. If their freakishness is unproductive, it is easy for us to pass judgment on them, but, not infrequently, they devote their energies to something that society regards as valuable. In this group there is little

doubt that there are a great many reformers, who are motivated, not by their insight into human needs, but by some freakish impulse in themselves. When their idiosyncrasies are of the sort that run counter to the law, those with psychopathic personalities become criminals.

In their chapter on psychopathic personality, Landis and Bolles (19) discuss the following deviant types; we see a wide range of wasted human beings among them. (a) *Eccentrics* who show an essential weakness of character with an inner insecurity that expresses itself in the odd, peculiar behavior serving as a mask for the inner feelings. This behavior is carried well beyond the idiosyncrasies we often see in normal people and which we may label as eccentric. (b) *Vagrants* in whom there is an uncontrollable and overpowering desire to move on from place to place with no apparently good reason for the desire. These people are not the ones who are moving to escape the law; often they have had no criminal record, but their vagrancy makes them brush with the law. (c) *Troublemakers* or *cranks* who cannot seem to understand others or to be understood. They have no conception of feeling for others, or mercy, and such egocentricity leads them to an antisocial attitude with accompanying ill feeling and troublemaking behavior. Many such people are probably paranoid, and many authors would say we should classify them as such. (d) *Fanatics* may also be paranoid and include both the reformers and the highly active and unreasonable cynics. They tend to be sufficient to themselves, hungry for prestige, irritable, and without a sense of humor. (e) *Senseless criminals* perform acts of aggression and violence against persons or society over which they seem to have little control. They may realize what they are doing but are unable to control themselves. Their attitude is essentially anti-social but they may be able to control the outward expression of such feelings most of the time, only to have all their inhibitions temporarily cast aside in order to seek revenge in an orgy of crime such as assault, murder, arson, theft, and the like. (f) The *explosive psychopath* is much like the senseless criminal except that he confines his outbursts to temper explosions and may direct his aggression toward himself finally in suicide. (g) The *depressive psychopath*

underestimates himself and the world and takes a very pessimistic outlook on the future. Everything is fraught with danger—all the everyday events that most people take in their stride. If the world gets too much for him, he too may try to end it all in suicide. (h) *Moral defectives* are those who have ability to do schoolwork and other intellectual tasks but who cannot adapt themselves to society's requirements. They cannot seem to project into the future enough to foresee—or care about—consequences, and their actions are related only to immediate needs, impulses, and goals. Rightness and wrongness are foreign concepts to them so that their behavior appears very selfish and without regard for the rights, privileges, or feelings of others. (i) *Pathological liars* tell stories all out of proportion to the need for prestige or to reality. They seem to gain nothing but relief from some kind of inner tension that others cannot understand. Their stories do tend to make them seem important, either favorably or unfavorably, but the lengths they go to in their fabrications are entirely unwarranted; furthermore, they seem unconcerned about whether their lies might be seen through.

This list as given by Landis and Bolles contains most of the sorts of people classified as psychopathic personality. In some of them appear elements of psychotic and psychoneurotic behavior; many psychiatrists and psychologists would prefer to find these neurotic or psychotic patterns and deal with the patient as a neurotic or psychotic rather than put him in the sort of wastebasket category of psychopathic personality. (Preu, 33; Wegrocki, 40; Cleckley, 7) Where this is possible it is a step in the right direction; on the other hand, in our present state of knowledge there are people who cannot be so classified or understood, and yet who evidence defects which make us call them psychopathic personalities. The definition of psychopathic personality may not be clear, but many clinicians feel about it as someone is said to have felt about an elephant; he could not define it, but he felt sure he would recognize one when he saw it.

359. **Some characteristics found in psychopathic personalities.** We would be foolhardy to try to give a list of characteristics common to all persons queer enough to be

called psychopathic personalities. Nearly every authority on the subject stresses different factors, and many have merit in the cases to which they apply. Here we shall mention some of the most commonly suggested factors in the make-up of the psychopathic personality, keeping in mind that these are not all common to all cases so labeled.

1. *The behavior and attitude of the psychopathic personality is antisocial.* The term antisocial must be understood in its broad usage without being restricted to criminal actions. The vagrant does not conform to the usual social custom of having a "permanent address"; he does not build up any lasting friendships or social contacts; community loyalty is not important to him; in the larger sense, his attitude and behavior are not socially oriented. We can see the same sort of pattern of interests in the eccentric and the fanatic. Their philosophies of life are so inelastic that only their own values and interests are reacted to with any feeling. This philosophy of living is highly individualistic, not conforming to anything normally expected of those who live in a given culture and are modified by the experiences they have with other human beings in it. The antisocial character of senseless criminals, pathological liars, troublemakers, and moral defectives is more obvious, the very nature of their actions being against the social folkways and mores. Such antisocial behavior often leads the person into a position where he must actually reject constituted authority, and if aggression follows, he gets in trouble with the law. He seems unable to follow or pursue socially acceptable goals. (Lindner, 20)

2. *Egocentricity and inadequate emotionality are central.* Egocentricity is surely not a differentiating characteristic of psychopathic personality, for we find it prominent among many other disorders, including hysteria. The egocentricity of the hysteric is aimed at getting attention and advantages for himself, to be sure, but he does seem to understand and sympathize with the feelings and attitudes of other people. It is the inability of the psychopathic personality to feel himself into the life of the world around him and still remain a part of that world in a real sense that marks his egocentricity. He seems to have no conception of morality, kindness, mercy, and the tender virtues, except as applied directly to

himself or his love object. In this regard his emotions do not seem to have developed along the usually expected lines. He is likely to be irritable and to blame others rather than himself without any empathy whatsoever for how they feel or what emotions they are experiencing. Emotional responsiveness is quite inadequate, there being too much response to trivial stimuli that are related to the person's own interests and ambitions and no feeling at all for other people's happinesses and sorrows. Many such individuals will show no sorrow or sympathy at all for the loss of a loved one by one of his associates but go into a period of mourning if his pet dog meets with an accident.

3. *Judgment is poor, but intelligence is usually average to superior.* Woolley (41) describes, as an outstanding characteristic of the psychopathic personality, his inability to forego immediate satisfaction for a future gain. He lives his life purely in the present without regard for the consequences or what may be the result in the future. Many acts of aggressiveness are probably due to the fact that no adequate preparation for the future has been made previously so that strong tactics must be used for present satisfaction. Woolley feels that such behavior can develop in children who are trained in skills of aggression and are indulged in their own egocentric interests without giving proper attention to the children themselves; they never learn how to react to the limits to aggression and personal indulgence set by society. In this regard their judgment is considered poor so far as making an adequate adjustment to society is concerned.

Another evidence of poor judgment is seen in what has been called inability to profit from experience. (Cleckley, 7; Sprague, 36) It is not necessarily true that the psychopath does not profit from experience, but he does not accept his experiences and react to them in the way society intends that he should if he is to be considered a part of that society. He does profit from his experiences by learning that he gets satisfaction from his *own* way of behaving but none from acting as others would have him do. What is usually meant by an inability to profit from experience is that the patient does not mend his ways when he is rebuffed, rejected, ostracized, or in other ways does not reach a social goal. But we do not

know nearly enough about the dynamics of psychopathic personality to understand whether he is in position to react in any other way without causing some new disturbance just as disheartening for his own personality development. Learning is too complex a function for us to assume that all people should learn their lessons in the same ways just because the social environment around them appears superficially to be the same.

These inability to postpone one's satisfactions and to profit from certain kinds of experiences in expected ways occur in the absence of any intellectual deficiency as measured by an intelligence test. The psychopathic personality is not feeble-minded or subnormal in most cases. In fact, he may be a charming conversationalist, have brilliant insights, and be very clever in working out his own ideas—the ones that seem so out of place in an otherwise smart person!

360. Etiology of psychopathic personality. Such a variety of persons as are described by the term psychopathic personality could hardly all have the same backgrounds. That should be obvious. That there might be dynamically some similarity in the ways they have reacted to their environments and themselves might make more sense, but even here there are large differences. Psychologists have not adequately given attention to the etiology of psychopathic personality or its various subgroups (these might be found to have different backgrounds). The only related studies made by psychologists in any number have been in the field of delinquency, which, of course, in many instances is closely related to psychopathic personality.

In the main, psychiatrists have taken the position that psychopathic personality is based on hereditary or at least constitutional factors. This is seen in the term constitutional psychopathic inferiority, often used in place of psychopathic personality. Preu (33, p. 927)¹ summarizes the opinions of most psychiatrists when he says, "...the psychopath is still thought of by almost all psychiatrists as an individual born in some way defective or at any rate hereditarily doomed to defective development. Thus Henderson and Gillespie (1930), Henry (1938), Muncie (1939), and Strecker and

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Ebaugh (1940) continue to classify the psychopath in the group of constitutional defectives."

Preu goes ahead to point out that such dependence on hereditary bases for psychopathic personality is founded largely on reasoning by exclusion. If nothing else has been shown to be the cause, then heredity must be, especially when it seems so unexplainable otherwise. Reasons offered for an hereditary basis are: (a) the maladjustment usually occurs in early childhood; (b) once established the psychopathic behavior usually continues throughout life; (c) there may be psychopathic deviations in several members of the same family; (d) psychopathic personality resists treatment; (e) there is some evidence of electroencephalographic deviations in psychopathically maladjusted children.

The last of these arguments is the only really positive one, and by itself it could not speak for the hereditary basis of psychopathic personality. The period of childhood, as we know well, is the time when basic habit patterns, whatever they are, are most likely to be built, and social influences are the most effective on the child. If conditions are such as to make the child react antisocially instead of according to norms, we should more readily expect these reactions to appear in childhood than later. We also know that our childhood habit patterns are very persistent, especially where our major reactions to our environment are concerned. To believe in the continuation and personality significance of habit patterns learned in childhood is just as logical as to claim that such habit patterns may have been inherited, or that some kind of constitution has been inherited that makes them necessary. Studies on hereditary tainting in families where psychopathic personality has appeared are very meager and inconclusive. And our inability to treat psychopathic personality with great success is no excuse for our saying that it must be inherited and not subject to treatment. It could just as well be that we do not yet know as much about treatment as we should know; there are lots of learned patterns of behavior that we have found very difficult to change by any kind of known treatment, and psychopathic personality could very well be one of these. We cannot say that psychopathic personality is not in some way inherited or constitutional.

Neither can we say that it is, and thereby does not depend on learning. We simply do not know. In our ignorance we should like to leave the door open for either interpretation to be applied, as later facts warrant. It seems logical to the authors that one could learn just as easily to be antisocial and egocentric as to be a socialized individual with normal concern for others. The following case may show some of the signs of psychopathic personality and also give some hint that the behavior may be learned. We cannot be sure, of course, that there was not some kind of tainting which pre-determined that the boy would react as he did. We are not inclined to think it likely, however.

John M. is a high-school boy who has had several bouts with the law over destruction to property for no apparent reason and for which he can give no explanation. He is surly when questioned and inclined to try to push his way around the authorities forcibly when his anger is aroused. This same pattern of aggression to the point of danger to himself and others has been noted all through his school years, and he has been the terror of the school authorities and the neighbors near his home.

Physically, he is very well developed although he is short for his age, a fact which he resents very much and compensates for in every way possible. His muscular development and excellent health have won him the admiration of many of the boys his own age and those somewhat older. He seems to expect this hero worship and is vexed if it is not shown by younger boys. He has built up somewhat of a following among those his own age and younger, based largely on this admiration for his physique and bold, unpremeditated exploits and upon the fact that he has been known to beat those who did not follow his leadership. Many of his followers say that they do not really like him, that he has never shown any consideration for them or any understanding of how to get along with others.

Socially, he appears to be a leader, but this is due to awe and fear more than to willing respect or genuine admiration. Actually, he leads a rather lonely life except for having people watch and comment on his many show-off tactics. These range all the way from making wisecracks to his

teachers to taking the mayor of the town to a public place and ordering him to take off his clothes; this was done even though, almost before his threat had been made, he and his companions were in the hands of the police, and he had known this was likely.

Emotionally, he has shown little affection for his family who have tried to give him every economic advantage they could. He is subject to violent outbursts of temper of such a vicious sort that he has threatened to kill people. Such tantrums have nearly always "worked"; that is, they have brought his parents and friends to terms so that he has had his way about nearly anything he desired. He literally dominates his whole household with such tactics and has done so since he was a very small child. Never has he had the chance to learn to submit to the wishes of another person in any consistent fashion.

His parents are well-meaning, upper middle-class people who have made their home for most of their married life in a relatively large midwestern city. Their apartment has been near the heart of the city although not in a delinquency area. But there has not been adequate play space, and the children of the neighborhood frequently got in each other's way and often sought to find entertainment in the nearby business section or in parks remote from home. The mother dominated the father who was a hard-working man with little time for his family. When he got home he consistently had to mete out punishment to his son for the various assertions of the day, which by that time the boy no longer remembered (as a young child), so that the punishment stood for definite rejection to him and aroused very strong feelings of resentment. After such punishments were over, the father apparently felt called upon to give in to his son in atonement, so that the boy was able to throw a scene both during the day with his mother and in the evening with his father and have his wishes obeyed. In addition, the mother, who was unable to cope with him, reminded him very often that he was a bad boy for treating her as he did. Nowhere in his family relationship did he find that it paid to love and consider others; he did not seem to get love from his parents for anything he did; but he did get his demands fulfilled. As

he grew older, he sought recognition outside the family by daring exploits and defiance of authority.

He never seemed able to feel himself into any emotional situation as felt by others and was interested only in his own welfare, and this not in proper perspective, as evidenced by the foolish risks he took and his impulsive flings at constituted authority. He seemed unable to control his strong desire to destroy property and has been frequently fined and jailed for short periods for breaking windows, overturning parked automobiles, and the like. His parents have usually come to his rescue and paid his fines, imploring him to mend his ways. Never has he really learned to suffer the consequences of his actions.

Here we have the picture of a psychopathic personality who may become a loss to society but whose background was such as to help us to understand, in part at least, how he got that way. In many instances we have no such clear picture from which to draw our insights. The subtleties of the conditioning process are obscured, and we cannot judge the important factors to which the person has reacted in such an inadequate manner.

LXXXIII. SEXUAL ABERRATIONS

In Chapter XI we referred to the normal development of the emotion of love in the child from his early self-love to the more mature heterosexual and altruistic sentiment. We saw that physical, bodily satisfaction and the sex drive had much to do with the orderly development of our love relations with other people, but that the experiences we have been subjected to were also vital in understanding our love and sex attitudes and actions. The following perversions, most of which have to do directly with sexual expression, can be largely viewed as the failure to learn the mature patterns of sex and love development with consequent adherence to childish or distorted ones. The reasons for this adherence are still obscure, but there have been no predictive physical, physiological, or chemical bases for them yet discovered, and in many instances the learned patterns are rather clear. There are many frustrations to the sexual drive which can lead to improper adjustments to them. Sexual aberrations appear frequently in psychopathic personalities, although they are by no means limited to them.

361. **Abnormal love of self.** Regarded from the developmental point of view, love of self may be considered as a persistence of the infantile stage. The person has never quite got away from absorption in his own satisfaction.

1. *Absorption in individual organic satisfaction.* Such an individual is taken up with a stimulation of the erogenous zones developed in infancy. He may have developed an oral sensibility, in which case stimulation of the oral zone is his main pleasure. This may take the form of thumb-sucking, of course, but may be hidden in such things as nail biting, gum-chewing, tobacco-chewing, or smoking, or a continual manipulation of the lips. (The author recently saw an old man in a public audience rubbing his mouth with his hands during the entire performance.) When their enjoyment is not confined to a particular zone, these individuals are concerned with physical comfort of one sort or another; they revel in their own sensory pleasure. They will prolong their bath for an hour, enjoy lying in bed with the same profound contentment that an infant manifests. Physical comfort is their ideal.

2. *Autoerotism.* When absorption in one's own sensations takes a purely sexual form, it sometimes leads to the habit of masturbation. Most people masturbate or have masturbated at times. The statement, sometimes made by charlatans, that masturbation will cause insanity or other diseases is utterly false. It should be regarded as a childlike stage of development which, if not outgrown, might be a barrier to adult love because it places too much emphasis upon immediate physical gratification. The greatest danger is in the fact that the individual worries about his "moral delinquency." Such worry may lead to all sorts of irrational fears which the individual cannot seem to escape.

3. *Narcissism.* This is a general term for self-love which may include the two previous forms but has also a wider extension. The narcissistic person loves not only his own physical satisfaction but his intellectual attainments, his appearance, and other personal qualities. If he has any affection for another, it is for one who reflects his own personality. His love for others is a reflection of his love for himself. The term is derived from the name of a legendary character. According to Ovid, Narcissus was a youth of extraordinary beauty who spurned all women. His rejected admirers prayed to Nemesis for vengeance which was accomplished in the following manner. Nemesis caused Narcissus to fall in

love with his own image which he saw reflected in a forest stream. Filled with this tenderness, he pined away in hopeless love beside the stream in which he had seen his image. A narcissist cannot love another except as his own traits are reflected in him, and if he cannot find another such individual he is doomed to disappointment.

362. Persistence of childhood loves. A child first naturally loves the members of his own household. A persistent attachment for these individuals is normal provided it is supplemented by later loves. An abnormal attachment of a boy for his mother has been called an Oedipus complex.¹ Only when this persists to the exclusion of other attachments does it become dangerous. An analogous situation, called the Electra complex, is one in which a girl forms too lasting an attachment for her father.

Writers have been prone to blame such attachments upon the child, but usually investigation shows that the mother (or father) is at fault, since the parent fosters the attachment. These parent-child loves form the basis of most of the mother-in-law difficulties. A very illuminating example of this type of situation came to the attention of the author. A woman came with the request that we do something with her daughter-in-law to make her love her. Investigation of the situation from all angles revealed that the mother had been unhappy in her marital relations and had become excessively devoted to her only son. She had tried every ruse she knew to keep him from marrying, but in spite of this

¹ This term refers to the myth of Oedipus. Laius was warned that he was to die at the hands of his son. When his wife Jocasta bore him a son, the child was given to a faithful herdsman to expose on Mount Cithæron. Ignorant of the prophecy, the man in pity gave the child to the shepherd of Polybus, King of Corinth, and that ruler, who was childless, reared him as his own son. The young man, Oedipus, becoming suspicious of his origin, due to the taunts of some drunken comrades, sought the oracle of Delphi, who informed him that he was doomed to slay his father and wed his mother. Horrified, Oedipus fled from Corinth, and shortly afterwards met Laius with his servants. They tried to force him from the road, and in the fight which followed Oedipus slew Laius and all his servants, not knowing the identity of his assailants. Going on to Thebes, he found this place harassed by a Sphinx, who propounded a riddle to every passer-by and devoured all who failed to solve it. The hand of Jocasta had been offered to anyone who solved the riddle. Oedipus did so, slew the Sphinx, and thereby won the hand of Jocasta, his mother. At first he prospered and had four children. After a time a pestilence came to Thebes and the oracle declared that the murderer of Laius was the cause and should be expelled from the country. Oedipus instituted an inquiry which resulted in his learning the truth. Jocasta hanged herself, and Oedipus put out his own eyes.

he did break away enough to do so. The mother then tried various tricks to break up the match, a situation which the wife sensed and tried to stop. The boy at first naturally sided with the mother. The fact that the boy, when he saw the whole situation, was willing to move with his wife to another city, shows conclusively that in this case the mother was the one who fostered the attachment. The son was merely an innocent victim.

Some very complex situations may result from an unwise though innocent excess of affection of a mother for her son. A boy of about eleven was brought to us with the complaint that he could not read. He was intelligent, had a vast amount of information for his age, but could not read the first-grade primer. He had been given special reading drill in the schools for five years but all to no avail. We found that the mother and father had been separated from the time of the child's birth. The mother confessed that the boy had been her joy and comfort through all these hard years. She expressed a sincere desire that this relationship should continue. Her hope that it would continue was fortified by the boy's attitude. He had told her that he would never leave her, that when he got older they would adopt a baby and have a home of their own. To the mother this was a beautiful sentiment. Sensing his reading difficulty and fearing that he would be handicapped thereby, she had faithfully read to him through all the years. The mother was unconscious of the effects of this excessive love, but when she was told of the significance of what she was doing, namely, that by reading for him she was robbing her boy of all incentive to read, she took steps to wean the boy from her. She refused to read to him, made him get some outside companionships and learn to depend upon himself. This change in her attitude resulted in the boy's learning to read so rapidly that in a year he had mastered fifth-grade literature. The boy was enabled to acquire five years' reading knowledge in one year, whereas before he had not acquired first-grade ability with five years of special drill.

If a child does get away from such an abnormal attachment, he is very likely to select as his idol one who closely resembles his mother. Sometimes this resemblance is in super-

ficial traits; occasionally it is in age. Now and then the newspapers print an account of a boy of twenty marrying a woman of fifty. Probably this is a transfer of the mother attachment. As a similar example, a boy's first love is often for a mature woman much older than himself.

363. Persistent love for persons of same sex. When a child is first weaned away from his home, he is likely to form attachments with those of his own sex. These attachments are natural steppingstones to later development. He has to learn to get along with others where no sexual factors are involved before he can proceed to the more intricate relationships of the other sex. His persistence in homosexual relationships may spring from fear of sexual relationships or from the fact that he has met with reverses in his courting attempts and has reverted to loving a member of his own sex.

1. *Sexual inversion.* A sexual invert is one who takes on the characteristics of the other sex. In some instances a person may have some of the physical characteristics of the other sex, a condition known as *hermaphroditism*. Such a physical condition is likely to carry with it mental difficulties because of the added intricacy of adjustment involved in such a condition. In other cases the physical condition may not be pronounced enough to warrant the name of hermaphroditism, but there may be some physical similarities to the other sex. For example, a man may tend toward the skeletal framework of a woman; large pelvis, narrow shoulders, small bones, a feminine distribution of hair and a treble voice. On the other hand, a woman may tend to have a masculine frame, hard muscles, a coarse voice, and a tendency to grow hair on the face. Such conditions are due to glandular disorders and their only significance for psychology is the mental difficulties that such conditions may produce.

In other cases there is no physical mixture of sex characteristics but the individual has tastes and interests of the other sex. The boy likes to sew, to do fancywork, to keep house, to use cosmetics and perfumes, to frequent afternoon tea and bridge parties, or has similar interests. The girl of this type likes to wear masculine clothing, to engage in masculine activities, is apt to be rough in her behavior, in short is what

we call a tomboy. In many instances such a tendency to assume the secondary traits of the other sex is accompanied by a tendency to cultivate the love of members of the same sex.

2. *Homosexuality*. Homosexuality means a love attachment of one person for another of the same sex. This may be a mutual love or it may be experienced by only one of the parties. The relationship may be only an interest in the personality and work of the other, it may be accompanied by the ordinary preliminary caresses of courtship, or it may involve pronounced sexual behavior. The term homosexuality is usually used to embrace all degrees of this type of relationship.

Very mild *crushes* are often formed where girls are isolated from male companionship or where boys are kept from association with girls, but are by no means confined to such situations, for they can be found almost anywhere. Homosexual attachments are not quite so common among men but they are frequent enough to be easily observed. Most of such attachments are mere passing phases of development, and the subjects of them go on to heterosexual relationships. The way to guide young people over them is to give them a wholesome attitude toward the whole sex relationship and to encourage a specific wholesome interest in particular members of the other sex.

364. **Perverved attitude toward the other sex.** As we have seen, the most common reason for a person's failure to make normal development in his sex life is that he has some abnormal attitude toward the other sex. The attitudes toward members of the other sex are therefore of basic importance in the understanding and treatment of any sexual perversion.

1. *Fear*. Society demands a certain amount of restraint and control of sexual impulses. We have found that this is to the interest of all concerned. In order to make these inhibitions effective it has been the custom from time immemorial to build fear barriers. The ancients had an intricate system of taboos relating to the sexual relationship, and while in this day our taboos do not assume the bizarre form that they did in ancient times we have continued to use fear as a deterrent. The question has been raised as to whether such fear restraints should be abolished, and if so what inhibi-

tions should be substituted. A great difference of opinion exists and this is not the place to venture an opinion. What we do find is that when sexual fear is overemphasized it may lead to an inhibitory barrier which the individual later finds impossible to overcome.

(a) This fear may lead to anxiety symptoms. The person finds his sex energy seeking an outlet, and if all outlets are blocked, he may develop a fear of where this dilemma will lead him.

(b) It may lead to specific fears that seem totally unrelated to sexual matters. In such instances the specific fear is a symbol of the repressed actual fear. For example, a fear of high places may be an expression of a fear of a moral fall. A fear of crowds may symbolize a fear of too intimate contact with the other sex. A fear of disease is often present because some diseases are known to spring from sexual relationships with diseased persons. Many other such symbolic fears are based on undue sexual inhibitions.

(c) It may lead to frigidity. There are wide individual differences in the tendencies toward the opposite sex. If the sex urge followed the normal distribution curve, it would mean that a very small proportion of the population would manifest sexual frigidity. However, frigidity is present in a greater proportion of people than a normal distribution would warrant and is probably due in large part to inhibiting fear.

2. *Sexual hyperesthesia*. This condition is the other extreme from frigidity. It may have a physiological basis, it may be due to lack of proper education in restraint, or it may be an overcompensation from too severe restraint. When found to an extreme degree in a woman it is called *nymphomania*, and when found to excess in a man it is called *satyriasis*.

365. **Abnormal sex objects.** We have shown how the love for another person is built up. If some unusual "love object" arouses the feeling of satisfaction on which the love response is based, this attachment may prevent the development of normal love. It matters little whether or not such love is returned so far as its vital significance for the individual is concerned.

1. *Pedophilia*. This is a tendency to love an immature child. We can see how such a tendency might develop from a fear of the complications involved in falling in love with an adult. However, we must determine the reasons for its presence in each individual case.

2. *Bestiality*. Affection for an animal is not regarded with disfavor by most persons, as is evidenced by the fact that many have pets around their homes. Where the love for the animal becomes a substitute for the love for human beings, it is not so readily accepted. The main cause of such a situation is a lack of human love adjustments and is well expressed by the phrase, "The more I see of some people the more I love my dog." That the intense love for an animal is a substitute for a maladjusted human love is seen in the following instance. A woman of seventy was brought to the hospital because she had become unbalanced on the death of her pet cat. Now, even if she did love her cat why did she become unbalanced because the cat died? We may love a human being but do not need to become insane when we lose him by death. We found upon investigation that due to a series of unfortunate circumstances she had lost faith in all human beings. Her grip on life had about slipped except for the meager comfort she had gained from her cat. The cat was thus the last defense and the last object upon which to hang her thwarted affection. When the cat died she had nowhere to turn.

3. *Fetishism*. This is by far the most common type of sexual perversion. Usually it is rather harmless although it may go to such extremes as to lead to difficulty. Fetishism refers to the situation resulting from the love of some object which has become associated with the love impulse but which of itself would not ordinarily arouse such an impulse. Such objects may be the hair, a glove, a handkerchief, lingerie, a mole, a dimple, a particular hair color, and so on. The reason for the importance of these things is probably association with the object of childhood loves. For example, a case has been reported of a man having no interest in a woman unless she wore particularly disreputable shoes. It was found that an old nurse whom he had when a child had worn shoes of the particular type that he so much admired.

As we have said, the presence of a fetish does no particular harm. If a man has loved a dimple in his mother's chin and the girl he loves has a dimple he has made a fairly normal adjustment. Some peculiar difficulties arise, however, from this cause. Suppose a boy has a fetish for long hair. He marries a girl because she has hair of this sort, although neither may realize that this is the main source of her charm. If with changing styles she cuts off her hair, she may be discarding the source of her attraction for her husband and may find his ardor cooling.

In other cases the fetish may lead to depredations of one sort or another. Cases have been reported where men have waylaid women, cut off their hair and permitted them to depart shorn of their locks. It is quite likely that many incidents of peculiar thefts are based on this mechanism.

366. Abnormal sex manifestations. The manner in which a person gains expression for his love may be perverted into various forms.

1. *Exhibitionism.* The tendency to gain gratification by exhibiting one's self is very common. It may range all the way from a crude display of one's body to appearance in a drama or the giving of a speech. The following case illustrates how this impulse may have a very important bearing on important phases of life. A young man with this tendency very strongly developed appeared with the following complaint. He had come to college planning to study for the ministry, but complained that all his interest in his studies had departed. He hated the university, his books, his professors, and everything connected with study. It was found that he had as a child been able to do good work only when his endeavors brought to him the plaudits of his comrades and elders. For example, he led his whole class in geometry as the result of a wager with the girls in his class that he could lead the class. He gained considerable notoriety by the feat. He had wished to go on the stage but his parents disapproved of this career on the grounds of the moral temptations involved. In order to gratify them he had planned to go into agriculture and had entered college with this as his manifest goal. He took no interest in this work and failed. He then decided to go into the ministry, and entered another

university, but had again lost interest in his studies. The agriculture ambition was a complete surrender to his parents' ideas. The ministry was a compromise between his desire for exhibition and their desire that he be free from temptations to immorality. A fine compromise seemingly, but not in line with his main motives. He stated that if he could not get interested in his studies he would have to leave college. He could not go home and so the only thing left was to go with a friend of his who was an actor. His failure in interest was obviously a scheme to force himself into the thing he wanted to do. He was finally adjusted by being induced to major in dramatics in the university.

2. *Curiosity.* Ungratified curiosity concerning the facts of sex and other factors may lead to undue curiosity, a perverted expression of which is the "peeping Tom." If not guided, this impulse leads to all sorts of peeping exploits. Even adults have been so subject to this tendency that they have come into conflict with the law. An indirect expression of this tendency and one that provides a good adjustment is to give the individual an outlet in scientific research or some other field where he can gratify his curiosity in a social manner.

3. *Abnormal association with pain.* In a manner that has not been adequately explained, the love impulses of a person may become connected with pain. This may take two forms, sadism and masochism. *Sadism* is a perversion in which the person gains gratification by inflicting pain on others. The pain may be physical or it may be mental. In its grossest exaggerations it may lead to torture and even to murder of the sadist's victim. In a less crude form it may lead to the creation of situations in which one's victim is tortured by all sorts of personal injuries. Some persons never love another with great fervor until they have made the object of their love weep. *Masochism*, on the other hand, is a perversion whereby the person gains gratification by suffering at the hands of another. Masochists never love another until they have suffered keenly at the hands of that person.

This outline of the perversions of love indicates the dangers which surround this most important emotion. Their presence in human life emphasizes the importance of ju-

icious direction rather than attempts to ignore or suppress this emotion. A brief statement about the underlying "meaning" of these perversions as seen psychoanalytically will be found in Maslow and Mittelmann. (24, Ch. XXV)

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CHAPTER XVIII

PSYCHOTHERAPY AND TREATMENT

Psychotherapy has both a general and a specific meaning. If the term were used alone as the title of this chapter, it might imply only the specific meaning of primarily an interpersonal relationship between clinician and patient; therefore, the additional term, treatment, has been included to indicate that we shall discuss also some of the physical and medical measures designed to be of therapeutic value to the mentally disordered patient. Of course, we have already made reference to methods of dealing with certain of the disorders as we have considered their description and etiology, but it seems pertinent to assemble in one chapter the principal therapeutic measures in use today.

367. **Wholesome individual differences.** The greatest temptation that confronts the student of abnormal psychology is to evaluate all mental disorders in terms of his own philosophy of life and to consider treatment and prevention effective only in so far as they make others more like himself. Before we become aware of the wide variations in human behavior and thinking that exist in abnormal individuals, we are inclined to believe that all persons are (at least somewhat) like us; then after we learn about abnormal deviations, we are inclined to believe that all persons should be like us. The student should advance beyond either of these two prejudices. He should have not only a clear appreciation of the facts of individual differences but should understand that others have a right to their idiosyncrasies. A patient should be changed only when he is made unhappy by his excessive deviations or when he brings unhappiness to others.

368. **Treatment and therapy as concepts.** These two terms, which are frequently used interchangeably, definitely imply that something is done to a patient to speed recovery. This notion further suggests that there was a disease or injury which could be cured. The person who has malaria is treated with quinine, and we say the drug has therapeutic

results because the patient recovers. Or a man has an inflamed appendix, the surgeon removes it, and we say that surgery was the proper treatment to make the patient recover. This ministration of a drug or of surgery by the practitioner to the patient is credited with being the primary factor in effecting the cure, although none would fail to recognize that the patient played some minor role in the process. This attitude of direct treatment has pervaded the thinking of those who deal with personality disorders too, and not without some false emphasis. What is more, the person seeking psychological and psychiatric help also may have the feeling that he is turning over the whole process to the physician or psychologist. In effect he says, "Here's my situation, Doc. What are you going to do about it?" As we shall soon see, there are many situations in which "Doc" answers the question by taking most of the responsibility and doing something about the patient's disorder. But we shall also find that many psychotherapists place much more emphasis on what the patient himself does about it. An inappropriate solution to a mental conflict is not the same as an organic disease since it is not an invader as the disease is. Rather it is a way of behaving that has failed to be adequate, and any therapist must recognize this fundamental fact, so that he may help the patient learn a new way of behaving or at least how to return to a formerly more adequate one. Only the person himself can achieve this. True, he most often cannot do it without the help of the clinician, but the clinician cannot do it for him to the same extent that the surgeon can remove the appendix. The clinician may direct the patient's thinking, suggest hot baths, use hypnosis, or effect a change in the patient's environment. But if the major emphasis is placed on doing something *to* the patient, the issue is confused. All these ministrations help, but the most important matter is that the patient must learn to work out for himself a more acceptable solution to his conflicts, one that is compatible with adjustment to the reality around him. (Richards, 78)

369. Goals of psychotherapy. One of the writers has heard workers in mental hospitals suggest that the aim of psychotherapy as practiced in a mental hospital should be to help the patient return to the way of living he used before he

became disordered. To them the term remission means literally going back to a former way of living and behaving. This attitude derives in part from the practical situation facing a therapist in a crowded mental hospital and in part from the feeling that no therapist has any business to do more than carry the patient back to his "normal" condition and allow him to take the initiative in going on from there. If he wants further help in living a different kind of life, he should seek it and not have it imposed on him by the therapist. This attitude is partially justified; most psychotherapists agree that they have no interest in converting a patient to a specific way of life and feel that they should not have. As soon as the patient is able, he should work with the therapist toward reaching his own goals. But this does not mean that there are no general goals of psychotherapy which we strive for whether the patient is a psychotic in a mental hospital, a psychoneurotic seeking help, or the man on the street with an especially difficult mental conflict that is keeping him on the anxious seat.

1. *Easing of symptoms.* The first thing the anxious, depressed, obsessed, or otherwise disturbed patient wants is the relief of his perplexing symptoms. Such relief is one of the aims of psychotherapy, but the psychotherapist knows that, except in severe cases, he must attack the conflict situation and not the symptoms themselves first. If you have followed the logic of this book at all you will know that treatment of symptoms alone is only a part of the job and will not produce lasting results in terms of a solution of the conflict which brought about the symptoms. The symptoms must be alleviated, but the treatment may not be directed at them specifically.

2. *Gaining insight.* A certain man came to a psychologist with several complaints, among which was the claim that nearly all his friends were insincere. He felt that often they "let him down" and that he could not depend on them; even his wife at times deceived him, and while claiming that she loved him would make fun of him. In the course of the interviews this man came to see that actually he was the one who wished secretly to be insincere. He had never admitted to himself that he was not satisfied with his wife and wished

to have affairs with other women. When he was finally able to see this in himself he was able to deal with the problem more directly instead of attacking the "straw man" of his friends' and wife's insincerity. Through the achievement of insight, his own motivation became clearer to him so that he could work on it openly instead of secretly. One of the chief aims of psychotherapy is the achievement of real insight into his own motivations and conflicts on the part of the patient. Then he can deal with them in their true light.

3. *Redirection.* When the patient has insight he is then ready to take more positive action. Not all are agreed on the best procedure for the psychotherapist at this point. Some feel that suggestion or direction should be given as to the best path to take to resolve the conflict; others suggest that the patient will do better to formulate his own goals and methods for reaching them, while in some instances manipulation of the environment by the therapist is recommended to the end of a re-education of the patient. Whatever the method employed one of the aims of psychotherapy is a change in the patient's way of dealing with conflict situations so that he is able at least to keep out of serious maladjustment again. It is to be hoped that there will be added the aim of helping the patient to live in his own group in a satisfying and happy manner, as a social as well as egocentric individual.

LXXXIV. SHOCK THERAPY

Every so often the medical and psychological world is swept with a wave of enthusiasm over some new method of treatment that promises great results. Early indications give the impression that the therapeutic agent will produce marvels with varied and sundry disorders. Such, for example, were the advance notices and advertisements about the sulfa drugs and penicillin. Later research has proved both of these drugs to be highly useful in combating many types of infection, but their cure-all qualities have been somewhat discounted as more specific information is gleaned about them. So has been the history of shock treatment for the psychoses. Early reports led one to believe that most schizophrenics and all manic-depressives could be greatly improved by the use of metrazol or insulin shock treatments. We have now settled down to the realization that they are among the most important and significant methods of treatment known today but that they are not cure-alls and have certain uses and certain limitations. Before we can know all of these uses and limitations, more research must be done of course. The material in the following discussions comes from many sources, and

references have been omitted, but sources will be found in the bibliography at the end of the chapter. A rather complete summary of studies in this field will also be found in Dorcus and Shaffer. (17)

370. **Historical background.** That shock as such might be of some value in treating behavior and personality disorders has been recognized for many years. For perhaps centuries, hysterical reactions have been treated by subjecting the patient to such extreme fear as to produce shock. Floggings, "ducking" in water, electric shock, twirling on a revolving stool, and sometimes even methods of real torture are examples. While we cannot condone the punitive aspects of the torture chamber it is entirely possible that some persons accused of being in league with the devil because of anesthetics, "visions," and the like were relieved of their symptoms by the drastic treatment accorded them.

But the application of chemically or electrically produced shocks to psychotic patients in a medical rather than superstitious or judgmental manner has a relatively short history. Meduna is usually credited with first using *camphor* and later *metrazol* systematically to produce convulsive seizures in his patients. (Metrazol is sometimes referred to as *cardiazol*, particularly in Europe.) Meduna and others had mistakenly thought they noticed a tendency for patients with convulsions not to have schizophrenia and also that schizophrenics who developed convulsions improved. Such findings have since proved to be without foundation, but they gave Meduna the idea of artificially producing a convulsive seizure in patients as a possible therapeutic agent. After camphor proved to be too slow and difficult to administer, he turned to metrazol which could be given intravenously and could produce much more rapid effects. Meduna was enthusiastic about the results of these injections. There were marked and even radical changes in the behavior of patients who had been plunged into metrazol convulsions, changes which were early interpreted to be in the direction of a more suitable adjustment than the psychosis had been, and also which it was hoped would be long-lasting. Both of these interpretations had to be tempered by later evidence. But at least here was a treatment that did something and something big to patients who had never responded to anything before.

Metrazol was not the first type of shock to be used in America to any extent however. In the 1930's Manfred Sakel of Vienna experimented with doses of *insulin* to produce a kind of shock with schizophrenic patients different from that caused by metrazol; Sakel's method was quickly adopted and tried in the United States. Insulin shock is more difficult to produce and to terminate than metrazol shock, and the latter quickly won great favor among psychiatrists in this country after insulin had given promising results for shock as a method. Also in the later 1930's a third method of shock therapy was introduced which made use of an *electric shock* terminating in a kind of convulsion. The ease of administration, its relative safety, and the reduced fear of the treatment on the part of the patient has made this method the most popular in the United States in the last few years. Metrazol largely replaced insulin, and now electric shock is largely replacing metrazol. Figures available from various hospitals indicate that the death rates and complications, such as fractures, infections, etc., resulting from any of the treatments are very low, but they are the lowest for the electric-shock treatment, death rates being probably no more than 4 or 5 per 10,000 cases treated and complications not many more than 1 per 100 cases treated. Most of these complications are such that they can be effectively treated immediately and leave no lasting effects.

371. **Description of the treatment.** We shall not attempt anything like a complete description of the technique of administering the shock treatment itself, but a general idea of what takes place may make the effects more understandable to the student.

1. *Insulin.* The patient usually goes to the "shock room" the first thing in the morning without having had any breakfast. He is put to bed, and around twenty units of insulin are injected. This dose is increased daily until a sufficient dose has been found to produce the shock symptoms. These symptoms may be of two varieties: the patient may have a coma and a sort of convulsion or he may quickly go into a deep coma with profuse sweating, and other autonomic manifestations. He is not left in this condition more than 45 minutes before the physician gives him glucose either through

a nasal tube or intravenously. The glucose brings the patient gradually out of his insulin-produced coma. Treatments are repeated daily with the exception of one or two days a week, and may sometimes last over a period of several weeks. The shock produced by insulin is often called hypoglycemic shock.

2. *Metrazol*. Metrazol is injected directly into the patient's vein, and its action is very rapid. The patient goes into severe tonic and clonic convulsions for a period of several seconds, usually ranging between 45 and 70. The convulsions are so violent that precautions are taken to safeguard the patient from injury, such as securing him to the bed and placing an object in his mouth to prevent his chewing his tongue. Until recently, even these precautions were insufficient to avoid a few fractures and dislocations. These were usually easily treated, but were hazardous nonetheless. Recently the drug, curare, has been used along with metrazol to help to keep the patient from thrashing too wildly in his convulsive seizure. Metrazol injections are given about two or three times a week for six to ten weeks or perhaps more.

3. *Electric shock*. Like metrazol and insulin, electric shock treatment is administered in the early morning after the patient has had no food for several hours. He lies on a relatively hard mattress and is safeguarded against injury. Electrodes and electrode paste are applied to the temples or forehead and a current of from 200-600 milliamperes is passed through the cortex for from 0.1 to 0.6 seconds. The patient feels no pain since the electric current travels faster than the nerve impulse and produces unconsciousness. There are both tonic and clonic contractions for approximately one minute after which the patient may awaken or remain stuporous for a while. As in all the shock therapies, technique varies, and some give daily shocks for five or six days before a rest of a day or two, while others give two or three treatments a week for two or more weeks.

372. **Psychological results of shock treatment.** When an observer notes the immediate effects of a series of shock treatments on many patients (although not all), he is not surprised at the enthusiasm with which they were at first received. Apathetic, uncommunicative patients may "wake up." Regressive symptoms diminish, and patients seem to take

more interest in their surroundings. Depressed patients may not be so anxious or vegetative but take on new life. Schizophrenics show a tendency toward personality integration. Notice that during the convulsion or comatose state the patient's personality seems to have reached the ultimate in disintegration. There is not only lack of coordination in the motor realm but in the mental and personality spheres as well. Practically no external stimuli seem adequate to arouse responses, and the patient seems completely anesthetic. Sometimes sensory and perceptual anomalies are seen, including hallucinations and visions, and there may be incoherent or at least incomprehensible mumblings. To watch these functions return to normal and to see the personality seem to reintegrate is a common experience among those who deal with the shock therapies.

If only such results were universal and also long-lasting! But continued study with adequate controls and follow-up indicates that shock therapy is only transient in schizophrenia, sometimes helpful in depressed patients, and frequently beneficial in involutional melancholia. A review of the literature gives apparently contradictory evidence, and of course the last statement was a generalization. It is really amazing how many obviously slanted studies have appeared in this field and the complete abandon with which authors report uncontrolled studies as not only evidence but proof. First impressions, reinforced by wishful thinking, have often supplanted careful, objective analysis of results.

When the properly controlled evidence is sifted down, it appears that shock treatment alone has practically no long-lasting effects of a favorable variety on schizophrenia. After periods of six months to several years the recovery and remission rates have declined almost to the vanishing point, so far as any advantage over untreated patients is concerned.

The picture is somewhat more encouraging with regard to manic-depressive psychosis, especially in the depressed phase. Some authors suggest, however, that intensive psychotherapy is just as helpful, if not more so, and avoids the complications of shock treatment.

Involutional melancholia probably is most susceptible to treatment by shock therapy, and complications such as mem-

ory changes are not so noticeable since they usually occur with age anyway. The psychoneuroses would seem logically not likely to respond to shock treatment as we shall see later, and the evidence seems to support our expectations except for a few neurotic depressed states.

While many workers have been willing to overlook certain psychological changes as the lesser of two evils, it has usually been observed that patients treated with any of the shocks show certain of these behavioral changes which resemble those found in patients with organic brain damage. Such behavior may be slight and not immediately noticeable, especially since the patient has just been behaving peculiarly anyway. Attention is often difficult to maintain as efficiently as one might expect in a "cured" patient, and there may be retrograde amnesia, especially for the period just preceding the shock, the psychotic period. On the other hand, there seems to be a releasing of inhibition over the more nearly "normal" behavior that preceded the psychosis so that it is again activated. This may in a sense be considered a memory change, this time for the better. This effect has been produced experimentally in animals and its significance will be discussed in the next article.

Workers regularly report that patients show great fear and even terror of the shock treatments. This is most noticeable in metrazol, next in insulin, and least in electric shock, some workers claiming that patients receive electric shocks without signs of fear. Others deny categorically that patients go for any form of shock without some fear. That it is reduced in the electric shock, even though that treatment seems fully as effective as the others, is a shred of evidence contradicting claims that the chief healing value of shock treatment lies in the fear it engenders in the patients. If a therapist is humanitarian in his attitudes, he has to have either real confidence in the therapeutic value of shock treatment or feel that anything is worth trying that might be of value when he subjects patients to shock treatment in the face of the terror of it they often show. We cannot feel that one should not use shock therapy if there is indication that it will do what other therapies will not do for the patient, but neither can

we feel that the indiscriminate use of this form of treatment is justified, as some have implied.

373. **Physiological results of shock therapy.** We have already mentioned that there are secondary physical complications arising sometimes in connection with the shock treatments. This is not the place to consider in any detail the organic changes, particularly to the nervous system, that stem directly from the technique used, but we must mention them. More and more evidence is amassing that the behavior, resembling that of brain-damaged patients, mentioned in the preceding article has some neurological basis. Post mortem examinations of patients treated by shock nearly always show damage to the cerebral cortex. The joker here may be that the damage had already been sustained before the treatment, although in many instances the evidence does not point in that direction. That it might not is further corroborated by the examination of the brains of animals who have been subjected to injections of metrazol or to electric shock. They, too, show some organic changes in the neurons. Added evidence of cortical involvement seems to come from experiments with electroencephalograms of treated patients, which have the characteristics of brain-damaged patients' records. This damage to the cortex could possibly be sufficient to release the inhibitions mentioned in the preceding article and allow the patient to behave in manners more characteristic of his "old normal self." That this would be the only beneficial organic brain change that might take place seems to be obvious, but the price paid for it might keep it from being called "beneficial." Not even the most ardent organicists have been able to point specifically to the postulated organic basis for all the psychoses in which shock treatment is advocated. Neither have they been able to find out just what it is organically that the various forms of shock treatment do to remedy this supposed organic disorder.

One more physiological change should perhaps be mentioned. There seem to be radical shifts in the balance between the sympathetic and parasympathetic nervous systems. Just what this means is not clear. Some have felt that the fact that the shock stimulates both systems is all important in

bringing about a proper balance between them. This assumes, of course, that the disorder has resulted in or has been caused by such an imbalance. This assumption, while interesting, has not been proved.

All in all we see that there are physiological changes which seem to account for some of the behavior that appears as a result of shock therapy, but which do not account for either the successes or failures of it in any consistent manner.

374. Shock treatment as a non-adjuster. From the quantity of material published in support of a purely chemical or physical explanation of the action of shock therapy one might suppose that such must have been shown to exist. This is not the case, however. It is salutary that organically-minded investigators be ever on the alert for strictly organic explanations of behavioral changes, because if they can be found, treatment is likely to be more specific and likewise more frequently beneficial. But it is one thing to be open-mindedly on the lookout and quite another to shut one's eyes to other possibilities and to draw conclusions which may or may not follow from the evidence presented. Too many accounts of the operation of shock therapy bear this stigma in spite of the caution one would think should accompany the explanation of the action of such differing physiological treatments as insulin, metrazol, and electric shock. One of the chief arguments of those who are organically inclined is that since the "cure" is physical or chemical in nature (as opposed to strict psychotherapy) its effectiveness must depend on the fact that its chemical or physical action attacks some organic condition which has been the cause of the disorder treated. An example of the fallacy in such reasoning is given by Klein (52).¹

A somewhat stronger consideration is furnished by the contention that there is no necessary relationship between the kind of cure employed and the "mental" or "physical" status of the factors involved. Stated differently, a psychogenic symptom may respond to physical measures, as can be demonstrated by means of a simple illustration: a father faints upon receiving a telegram announcing the death of his son in action. The loss of consciousness, a physical symptom, is caused by the sad tidings, a mental event. The symptom could thus be classified as psychogenic. Consciousness can be restored by a *physical* maneuver such as bending the father's head

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downward or by a *chemical* maneuver such as using spirits of ammonia. However, the success of either one or both of such non-psychological procedures would not justify changing the classification of the cause of the fainting. We would still be justified in attributing the loss of consciousness to the shock induced by the telegram. The father's love for his son would still constitute a causative factor. Analogously, a schizophrenic may be restored to the reality of his surrounding world by chemical or physical procedures without having such restoration mean that mental factors were not responsible for his original loss of contact with reality.

We have suggested several times that the normal person is the one who learns to adjust by becoming more and more sensitive to indicators that he may be approaching the danger zones beyond which he cannot go and still behave and live effectively. He also learns how to select the courses of action that keep him from intruding in the danger zone. We have seen how the psychoneurotic does not learn this very well but either does not see or misinterprets the signals and is thus non-adjusted. He does not discriminate well the proper courses of action to take, but he continues to work at it. The psychotic, on the other hand, is the specialist in one kind of adjustment, an inappropriate one to be sure, and one that may not only be unproductive and disliked by the rest of us but be harmful to the person. He is in a sense adjusted, has found a kind of safety zone, and refuses to leave it for fear he will be in an even worse situation. The shock therapies, as is well known, are most successful with just such people and less so with the psychoneurotics who are in a state of non-adjustment. It is entirely possible that the drastic nature of the shock therapies makes the previously uncooperative, complacent psychotic non-adjusted and able to take some course of action different from his psychotic behavior. Some have even suggested that the shock treatment is a form of punishment for the psychotic behavior, and that the patient looks for some kind of behavior that will not be punished. Under such circumstances he is likely to fall back on behavior that had previously been utilized without punishment. This may or may not be true, but it does make sense that patients could become non-adjusted as a result of the drastic nature of shock therapy, even though it does not seem to be sufficient to rouse some schizophrenics more than temporarily. The lack of success with psychoneurotics may be due to the

fact that they are already in a state of non adjustment and do not need to be placed there. What they need is intensive psychotherapy to direct their attempts at adjustment into more productive and efficient channels.

It may be that techniques of combining shock therapy with psychotherapy may be developed which will make the results of the "shaking out of complacency" more effective. Some psychiatrists feel that without intensive psychotherapy the results of shock therapy fall far short of their possibilities. We are inclined to hope that more research will be done along this line.

We have speculated about the psychological mechanism that might help to account for any good results of shock therapy, and we would like to see how our speculations stand experimental and clinical tests under a variety of circumstances.

LXXXV. PSYCHOSURGERY

Deliberate brain damage has been used for therapeutic purposes in the form of frontal or prefrontal lobotomy or lobectomy which we described in Chapter XIII. Certain areas of the prefrontal lobes of the cerebral cortex are either severed or removed in the hope that the patient will lose some of his fear, anxiety, and apprehensiveness. This is the chief therapeutic value of the method, and in some instances the transformation in the mood and personality of the patient is dramatic. Freeman and Watts (25) have done the most consistent work with the technique in this country, and popular reports of their work have made psychosurgery appear as a cure-all; many people still have a strong faith and desire that the wielding of a knife will remake their personalities. Neither Freeman and Watts nor other workers make any such claims. Nearly all agree that psychosurgery should be limited to certain sorts of cases which have not responded to other forms of therapy. Many would go further and say that it should be limited to those in whom there is no hope of recovery without this drastic treatment.

The reason for such caution is not hard to find. While recovered patients gain much of value in the form of release from anxiety and psychotic symptoms, they also lose the

ability to deal effectively in terms of the future, i.e., of possibilities; abstracting and categorizing behavior suffer especially. In some instances this disability is not serious in the life of the patient; he has built up certain routines of living that make him fairly well adjusted without too much abstract behavior; in others the loss is much more noticeable. A great deal depends on the social and occupational demands made on the particular patient. Another difficulty with psychosurgery is that it only prepares the patient for a changed kind of behavior without making the substitution. If there is a backlog of adequate adjustment patterns in the patient's past history, he may make the change with a minimum of difficulty, but many need definite psychotherapy after the operation. Immediately following the lobotomy there is likely to be a period of apathy and indifference which require expert nursing skill to help the patient move toward a more nearly satisfactory mode of adjustment. It may take as long as three years to know what effects the operation has had.

We see, then, that psychosurgery substitutes one psychological difficulty for another, but the substitute may be much the less of the two evils, thereby providing the patient the opportunity for living a much better-adjusted and happy life. Psychosurgery is new; we must recognize that it is potentially a very effective method and at the same time be extremely cautious in its use and in evaluating its results.

LXXXVI. PSYCHOTHERAPEUTIC AIDS

There are several very important therapeutic measures that are neither strictly psychological nor medical but that are deserving of mention and also, frequently, of much credit in helping patients to better ways of adjustment. We shall not be able to do them justice in this kind of textbook, but a brief description of each will give the student a better-rounded picture of therapeutic possibilities. Many of them are carried on by specially trained people, such as occupational therapists, physiotherapists, and social workers.

375. Hydrotherapy and physiotherapy. Hydrotherapy takes many forms, depending upon the specific need of the patient. "Wet packs" are used to produce a sedative effect upon greatly excited patients. Such "packs" consist of wet sheets into which the patient is wrapped in such a way as to restrict his movements. Soon, as the patient becomes quiet,

the restraint is not needed. Continuous baths with the temperature maintained at about 100° are used to quiet patients who, while excited, are not too active to remain in the tub. Needle showers and alternating hot and cold showers are used to stimulate lethargic patients.

Massage has been found to be of value in increasing circulation, in the stimulation of elimination through the skin, in hastening reabsorption of inflammation products, and in producing general invigorating effects. Neural lesions resulting from physical injuries to the nervous system, from infantile paralysis, and from inflammatory nervous infections may be benefited by massage and forced exercise of the affected parts.

376. Dietetics. High blood pressure may contribute to the onset of senile dementia, or to cerebral hemorrhages and apoplexy. A diet low in salt and protein content tends to reduce blood pressure and to prevent arteriosclerosis.

Epilepsy is being treated by a diet that is low in carbohydrates and high in fats. Pellagra and alcoholic neuritis may be prevented by the use of a diet that is rich in vitamin B. Both of these disorders have serious mental and personality consequences. There is some indication that lack of the B vitamins makes for moodiness and irritability in people although it is not shown that these can be alleviated simply by correcting the vitamin deficiency unless that is the sole cause for the irritable behavior.

377. Occupational and recreational therapy. Occupational therapy has become a very important therapeutic aid in all mental hospitals. The ordinary operation of the hospital community provides many wholesome occupations, such as cooking, cleaning, landscape gardening, farming, stock raising, carpentry, masonry, machine work, waiting on table, and the like. In addition, workshops are provided for weaving, chair-caning, toymaking, printing, basketry, painting, cabinet-making, leatherwork, and other similar activities.

If a patient is overactive, or easily distractible, he may be benefited by work at an occupation involving rhythmic movements, such as loom weaving, knitting, sawing, plowing, or polishing metalwork. (Dunton, 18; Haas, 35)

The depressed patient may be helped by work at a stimu-

lating task where there is a minimum of stereotyped activity, such as dramatics, games, and music. He may have to be introduced to such activities gradually, but skill is required for applying any kind of treatment to mental patients.

The introverted, daydreaming patient can often be brought into more intimate and genuine contact with reality by work or by play than by any other method. He should be assigned to activity where the unexpected is always happening. For example, one such patient was greatly benefited by being appointed helper to a clumsy plumber who was always having accidents. One day, in particular, the patient was favorably stimulated by receiving a jet of cold water in his face from a broken pipe. This accident broke down his habit of stolid indifference and he found himself working to repair the damage.

Many patients have been able to develop hobbies that have therapeutic value, such as collecting butterflies and mounting them, caring for rare plants, or making intricate jigsaw puzzles. The value of occupational therapy depends upon selecting with care the sort of occupation the patient needs. If left to himself, he may select one that will aggravate his disorder.

That normal social adjustment in the community is one of the aims of psychotherapy has long been recognized. All too often, however, the mental hospital provides only meager opportunities for the patient to gain any practice in making social adjustments outside the daily routines of ward life. In many progressive institutions, especially where funds and personnel permit, an active recreational program is in operation. Athletic teams are organized for those patients who are able to participate, hobby clubs may spring up, and regular movies and dances are accepted as part of the routine much as in a normal community. In fact, the aim is to make the patient feel he is as close as possible to a normal community in which he can participate to his best capacity. In occupational therapy there is the opportunity to help the patient both to find a creative outlet for his energies—to express himself in some way—and to find human contacts a little less painful than he had experienced or imagined them previously.

LXXXVII. PROJECTIVE AND IDENTIFICATION TECHNIQUES

Perhaps no more promising movement for more effective diagnosis and therapy has been seen than that toward projective techniques, especially with maladjusted and psychoneurotic patients. In essence a projective method gives the patient the opportunity to structure whatever he wants out of the stimulus situation instead of having a rigidly defined situation for him to react to. Some methods show less "structuring" than others in this regard. We cannot treat here those projective methods that are primarily used for diagnosis, such as the Rorschach Test, the Thematic Apperception Test, and the like, but must restrict ourselves to those that seem to be more directly useful in therapy. Even here there are almost as many specific varieties as there are people using them, and we shall limit ourselves to the consideration of two major projective techniques: Play and release therapy with children, and psychodrama with adults. Our chief concern with identification techniques—those in which the patient is able to identify himself with others—will be with various forms of group psychotherapy.

378. **Play and release therapy.** The study of maladjusted children is such a specialty in itself that we have referred to it sparingly in this textbook. We shall have to continue this policy and make slight reference only to the method of placing the child in play situations as a means of therapy. While free play is used both for diagnosis and therapy, we shall be most interested in its therapeutic values.

Each clinician is likely to have his own specific method for using the free-play situation. In general, the child is introduced to the playroom with few, if any, restrictions. There is likely to be available to him a variety of dolls and sufficient doll furniture to represent the usual home or school adequately. There may also be a sandbox or table, a source of water, a toilet—frequently child-size—and plastic materials, such as plasticine and clay that may be molded to fit the child's needs. Other toys and play materials may be introduced as the need arises or as the clinician sees fit. Ordinarily, only children sufficiently maladjusted to have been referred for treatment are placed in the play situation for therapeutic purposes, and ordinarily, they need no urging in the use of the materials and in acting out some familiar situation with variation or some phantasy. Very frequently, the clinician knows in advance the general nature of the child's difficulties and arranges to have appropriate toys available. If the problem is one of sibling rivalry, brother, sister,

mother, and father dolls are made obvious; if there have been severe restrictions on the child's infantile development, plenty of plastic materials, water, articles a baby would use, and the like are in evidence as well as other toys. Beyond this the clinician may or may not try to structure the play situation, usually not, particularly where diagnosis is important and the examiner wants as unbiased a picture as possible. Frequently the examiner leaves the room and watches the child through a one-way vision screen and listens either through a loud-speaker system or some other concealed means. As the child constructs his own private drama with the toys available, the clinician can get a good picture of some of the hostilities and fears that are prominent in his behavior problems. If the matter ends here, little of therapeutic value has been achieved. The examiner must go ahead to help the child interpret his behavior and achieve insight into it. He will also have a better basis for working with the parents and school authorities who play prominent roles in the causation of the maladjustment. In fact, many clinics that work primarily with children refuse to interview the children without having the opportunity of counseling with the parents as well. By this they mean not only getting a picture of the child's difficulties from the parents, but working with them in a therapeutic way also. Sometimes, no matter how much insight a child may have, he is powerless to remedy his behavior until there is a change in the behavior of those who dominate him so successfully.

But sometimes the examiner does not have to make interpretations to the child. When he is allowed to act in play as he wishes without restrictions or fears of retaliation, he may gain some insights for himself that are therapeutically valuable. For instance, one four-year-old boy tore into the doll representing his father with great violence and delight. At first he talked to him as he had obviously been talked to by the father—in demanding and derogatory but controlled language with emotional display but no violence. Shortly, however, he was spitting on the doll, stomping it, and calling it names that a four-year-old ought not even to know. During this display of hostility and temper he had an almost fiendish light in his face. After a few minutes of this, he

stopped suddenly, looked puzzled, then picked the father doll up, caressed it, and took it over to the doll representing the mother, and said, "See, I have spanked Daddy; now you can love me, too." He had suddenly gained childish insight into his hatred for his father as his rival for his mother's love. Such clear-cut insights are not the rule, and the therapist frequently steps in and either interprets with the child his behavior or guides the play situation or both.

Levy (59, 60) has written about a special form of free-play therapy which he calls release therapy. It allows the child to release his tension in a somewhat cathartic fashion. The therapist is generally present and may be reacted to, even attacked in a minor way. If the therapist is faced with a major attack, he usually insists that some doll represent him. He typically sets the stage and thus in a way controls the situation, but the way the child wishes to act out the drama is strictly his own, and thus there is largely a free-play situation. Levy says that release therapy should be limited to children who meet the following criteria: (1) the problem should be a definite one such as a frightening experience; (2) it should not be of too long duration; children over ten years of age are not good bets; (3) the difficulty should be the result of something that happened in the past, not of a present conflict that is recurring, such as a maternal overprotection. In other words, it is the child who needs the treatment, not some other person such as the mother. By thus limiting the sort of patient on whom he uses release therapy Levy can make the play situation primarily a therapeutic one instead of a diagnostic one, since the release of tension is the primary need in these children's lives.

379. Psychodrama. With adults play therapy is not so suitable as with children, although it has been tried. Moreno (70) has been interested for some time in the possibilities of group contacts for psychoneurotic patients and with the sociometric relations existing between the members of any group. He has emphasized that the groupings made in any institution can have therapeutic value if properly made. He and his coworkers have also emphasized the therapeutic value of having patients act out their conflicts on a psycho-

dramatic stage. Typically, the patient is given a role to play and other patients may represent other characters, or they may be portrayed by professional workers. By projecting himself into the character the patient may release some of his tensions, gain confidence, and even some insight. In addition there is opportunity for discussion of the role, of the difficulties in portraying it, and of alternative ways of doing so, because usually at some stage in the psychodramatic procedure there is an audience of those who would be sympathetic to the problem, such as other patients. Many roles can be suggested to the patient to play, each representing another facet of his personality, or another "alter-ego." The therapist is constantly on hand to create new roles and to destroy old ones when it seems advisable.

This is not the place to describe all the ramifications of the method of psychodrama. There is insufficient evidence as to its real value, but certain hospital staffs are trying it out with some enthusiasm in the hope that the acting out of the cathartic process may have some values not found in mere verbalization and that the group stimulation sometimes utilized will hasten insights and restore a more positive self-evaluation in the patient.

380. Group Therapy. This term is used in two different ways. Slavson (91, 92) has used it in connection with the treatment of children. He has remarked that maladjusted children frequently are in great need for security and unconditional love. In addition their sense of worth may have been destroyed and needs to be recovered and rebuilt. A group experience can contribute to this end very significantly if the child is given a genuine interest to occupy his time and experiences in group relations, including praise, which will work toward his feeling secure in the group and sharing a sense of worth with the other members of the group. Such groupings, to be of therapeutic value, must be rather permissive, and the leader must be able to accept the hostility of the child in order to fulfill his need for complete love of some person. Thus he can begin to identify himself with the group constructively and gain the security and respect that goes with it. This kind of group therapy is often a supple-

ment to individual therapy and is most useful with hyper-active or withdrawn children, with egoistic children, and with dull children unable to participate in interview therapy. It has not been too successful with neurotic delinquents.

In a recent communication Slavson (92) has called this kind of group therapy Activity Group Therapy and summarizes its operation as follows:

The pattern of Activity Group Therapy is briefly as follows: Seven or eight selected children are invited to come to a meeting place at a specified time where they can engage in various types of handwork. The children are grouped so that they would have a therapeutic effect upon each other. The importance of proper grouping cannot be over-emphasized. The very foundation of this treatment and its value and effectiveness are conditioned by proper combination of children. This is true for all types of Group Therapy whether with children, adolescents, or adults.¹

The other form of group therapy might better be called therapy in a group, and it is used both with children and with adults. It is primarily a discussion group in which the patient may regain some feeling of oneness with his fellows through a measure of identification with them. As mentioned above, Moreno has used this as a part of his therapeutic armamentarium, his interest being always in socializing the patient. This is also one of the chief methods employed by the general semanticist. Many others have also made good use of the discussion group, although many have not had any clear goal in mind in doing so. It is very important that the patient feel that the leader of the group (usually a clinician) takes a personal interest in him, especially at first. Only in this way will the patient be encouraged to participate and consider himself an accepted member of the group. As he hears discussion of matters that have been puzzling and bothering him, he is encouraged to speak of them too and is at the same time given a feeling that he is after all like *some* other people in the world. Thus he gets encouragement from others and begins to lose himself. In addition if he says anything, himself, he has committed himself, put himself on the spot, so to speak, and no longer has to try to conceal his motivations and conflicts. They are now revealed to this small group and he can act more naturally with them,

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in fact he must do so to protect his interests. (Hauptmann, 36) It is apparent that such groups should be limited to few enough members that discussion on the part of all is not only possible but encouraged—limited, for example, to five to ten members. (Foulkes and Lewis, 23) Schilder is reported to start the therapeutic work by having the patient write a rather complete autobiography including everything he can think of; this is not done until the patient has had some experience with free association so that he knows what is meant by "everything." Schilder then reads one of these autobiographies aloud as the basis for the discussion. Obviously group therapy usually is used with individual therapy rather than strictly by itself. Klapman (50) reports that group therapy greatly improves the efficacy of individual treatment in schizophrenia, and other evidence indicates that it is also helpful in psychasthenic disturbances but not so good for the hysterics.

LXXXVIII. PSYCHOANALYSIS

It is well-nigh impossible to give a fair picture of psychoanalytic therapy without first introducing a great deal of background material to explain some of the theoretical bases for psychoanalysis. We shall try to do the impossible, since we cannot give this background both because of lack of space and because we would have to pick one author to follow, since there is no complete agreement among psychoanalysts as to the theoretical foundations of their work. This tendency by different workers to try to clarify and realign hypotheses is all to the good; it should lead to a closer alignment of theory and fact. For too long a time many psychoanalysts revered the work of the master, Sigmund Freud, to the extent that his word was law. The interesting thing is that Freud himself was never satisfied to leave a pronouncement without further checking on it and changing it if later evidence so warranted; this has been one reason he has been such a good target for his critics, because they could claim he was inconsistent. He did change his mind when he thought evidence pointed to a change. In recent years Freudian psychoanalysts have been doing likewise, and there have been several modifications of the strictly Freudian theory. With these changes have come some changes in psychoanalytic practice, although the essential features of it remain unchanged. It is this therapy as a method of procedure in which we are most interested and which has probably contributed most to the field of abnormal psychology. Scarcely any psychotherapy proceeds without using some of the techniques of psychoanalysis whether recognized or not. It should be made clear, in case the student has not already seen it, that psychoanalysis is not a general term referring to any kind of psychological analysis of a problem, but refers to a specific formulation of theory, method, and practice.

381. Who can be psychoanalyzed. Although various claims are made for the effectiveness of psychoanalysis with different sorts of patients, there is general agreement that some prerequisites are desirable.

1. *The patient must need and want help.* If psychoanalysis is to be of value, the patient must be cooperative even if he does not understand or like what is going on. His desire to make a different kind of adjustment is an important factor in the success of the analysis.

2. *The patient should not be psychotic.* Best results are obtained with psychoneurotics, especially patients with hysteria, anxiety, and obsessive-compulsive symptoms. A few attempts have been made to treat psychotics in hospitals, but the results have not been too encouraging except in isolated instances. It is probable that the psychotic is unable to participate in the active way required in a psychoanalysis.

3. *The patient should have a normal or superior intelligence.* Since certain relations must be understood by the patient before a psychoanalysis may be effective, he must be intellectually capable of such understanding. He must be able to comprehend the interpretations made by the analyst of his own emotional conflicts and their relations to his difficulty.

4. *The patient should have shown some ethical development.* The life goals of the patient must be in a socially approved direction. In other words, he cannot have definitely antisocial tendencies. In a few instances an analyst may be able to help patients to change their ethical goals, but he must see this possibility clearly before undertaking the analysis. The surroundings of the patient must be such that he can make a change and such that he can gain the emotional support from his environment without resorting to his former unethical methods and goals.

382. Free association and catharsis. The most important part of psychoanalytic therapy is the free association process. After experimenting with hypnosis for a while, Freud came to the conclusion that more could be accomplished if the patient were conscious when he revealed the information which bore so importantly on his disorder. What Freud was trying to do was very complex, but the essence of it was to get the patient to uncover the historical sequence of events

which led to the blocking of impulses, repression of painful material, and the emergence of the symptoms. If this relationship could be discovered then the patient would be relieved and also in a better position to make a more realistic adjustment.

We have seen in a previous chapter that free association consists of the patient's freely producing every thought and idea that comes to mind. Everything possible is done to facilitate this process. The analyst is likely to see the patient every day, five days a week, for periods ranging from a few weeks to many months. This allows little chance for forgetting and also nullifies the necessity for warming up to the free association each time. Each session lasts for about an hour, giving the patient plenty of time and yet not allowing fatigue effects to be prominent. The usual practice is for the patient to recline on a comfortable day bed or couch with the analyst just out of sight, to the side and rear of the couch. Thus he does not intrude himself into the patient's awareness and yet his presence can be definitely felt. He may allow the patient to begin where he wishes or he may make suggestions as to where to start talking, particularly if the patient has trouble in getting started. It may take two or three days or several weeks for a patient to get to the point where he is willing and able to speak in a completely uninhibited fashion, but it is desirable that he do so.

The free flow of associations inevitably leads to catharsis, a method used in nearly all of the psychotherapies. Nearly everyone recognizes that the talking out of a problem relieves one of some of the tension associated with it and helps one to see it more objectively. This does not mean at all that the problem is solved or that the person knows what to do about it, but at least it may help to identify the problem more clearly. The telling about conflict material to a receptive and respected listener is essentially the process of catharsis, and is a necessary part of psychoanalytic therapy. In spite of resistances, shame, or guilt the patient is encouraged to tell his story. In the early stages no attempt is made to force him even though it may be recognized that he is giving conventional excuses for his illness or difficulty. The utmost care is taken not to push him too hard in seeing that his

trouble does not actually lie in overwork, a physical disability, or a vaguely defined inferiority complex. At a later time some psychoanalysts do tend more toward giving him a shove now and then so that the method resembles that of a purge more than a catharsis.

Many psychoanalysts believe that the most important experiences leading to maladjustment lie in childhood and are connected with our more basic or primitive impulses of sex, food taking, elimination, and the like. For this reason they are not satisfied until the free association process has taken the patient well into his childhood and with a certain degree of completeness. All psychotherapists recognize the importance of childhood experiences in the development of a neurosis, but many modern psychoanalysts and others feel that they have been grossly overemphasized, since in some instances they do not play the most important role in the present conflict situation. Present emotional problems are the more important, and the past needs to be brought into etiological relationship with them so that the patient may have an understanding of his actual emotional problems. (Alexander, 2; Horney, 41)

One other matter deserves attention in connection with free association, namely, the importance of dreams. Since most of the material pertinent to the understanding of the patient's problems is thought to be unconscious, one of the tasks of free association is to bring it into consciousness. To many psychoanalysts the royal road to the unconscious, however, is dreams. Dreams represent the working out of the patient's conflicts in symbolic form. The analyst is likely to take the dream material as the starting point for the patient's further associations since the manifest content of the dream (that which the patient reports) symbolizes the latent content (the real "meaning" of the dream). He then hopes to be able to state what responses each part of the dream represents and what the underlying events are that caused them. The procedure for accomplishing this analysis and the results of it have been discussed in a previous chapter.

383. Transference and resistance. Freud first thought that the sole value of free association and catharsis was contained in the emotional outlet it provided the patient. Later,

he came to the conclusion that there grew up a situation in which the interplay of emotions between the patient and the physician became very important. The patient used the physician as an object upon whom to project his pent-up emotions. He could love the physician or hate him as a substitute for the persons who had been the recipients of similar emotions earlier in his life. Freud called this emotional reaction of the patient toward the physician *transference* and divided it into two types, positive (love) and negative (hate). The psychoanalyst is supposed to study this transference, to use it to enable him to understand the patient's conflicts, and then guide it away from himself as the cure of the patient is finally effected. Since he is the recipient of the patient's emotional responses, he is able to study these responses and evaluate them and call them to the attention of the patient.

As a result of his probing, however gentle, and of calling the attention of the patient to his reactions with the analyst, the patient attempts to protect himself and to declare the analyst in error. He does not wish to admit the truth of what the analyst has been able to discover. This reluctance is called *resistance* and may be shown by refusal to talk about certain topics, by arguing with the analyst, by skirting around important points, and even by failure to keep appointments. The discussion of resistance and making clear what it is, is considered an important part of an analysis.

384. Interpretation. Since the patient's understanding of his own impulses and conflicts is essential to the theory of psychoanalysis, the analyst from time to time makes interpretations to the patient of what the material he has revealed means. This interpretation leans heavily on systematic psychoanalysis, and its basis cannot be understood by the student without much knowledge of the field. Just what is the opportune moment to introduce interpretation seems a matter for conjecture, but it is usually introduced often enough to keep the patient pushed a bit to keep up with the analyst, although in theory the patient should be allowed to go along at his own pace. We shall see that therapists other than psychoanalysts feel that introducing interpretation into the clinical picture produces some of the patient's resistance and that it is unnecessary. Most psychoanalysts seem to feel

that the interpretation is the most powerful weapon available in treating maladjusted patients.

The effectiveness of psychoanalysis is hard to evaluate since there are so few before-and-after studies that are well controlled. Certainly many practitioners feel that their patients have been helped, and many patients report the same. Just what has brought about the change is hard to say, but it is our opinion that many of the techniques of the psychoanalysts are essentially correct but that the process of therapy may often be slowed down by some of the theoretical expectations and interpretations of the analyst.

LXXXIX. COUNSELING AND INTERVIEW THERAPY

By far the largest percentage of psychotherapy is done through interviewing; in Chapter III we discussed interviewing as a diagnostic procedure, and now we shall see its therapeutic value. Because of its historical significance we have considered psychoanalytic therapy separately, but it should be discussed under the heading of interview therapy. Suggestive devices, advice giving, cathartic confessionals, much release therapy—all these are more or less interviews. We wish to call attention in this section, however, to two variations of commonly accepted psychological practice in clinical interviewing with a view to therapy. No two clinicians carry on an interview in the same way or use the same procedure with two different cases, but we shall brush in with broad strokes the usual pattern for therapeutic interviewing. In addition to the two usual varieties, directive and non-directive, we shall also mention a specialized therapy called General Semantics. Obviously, counseling or interviewing can be done only with patients who are cooperative and capable of participating, thus excluding many psychotics.

385. Directive therapy and re-education. The term directive is used largely to differentiate this procedure from what has been called non-directive. It is the more widely used pattern of counseling and *directive* should be understood in a restricted sense. The direction given to the interview and patient may be very slight and only in terms of guiding the patient's attention to unexplored areas for discussion; it may also be quite positive in terms of suggesting causal interpretations for behavior or symptoms or prescribing a course of action.

1. *The case history and psychological tests.* In Chapter III we referred to the nature of the case history and its usefulness in understanding the personality of the patient.

Most psychotherapists wish to have the essential details of a person's past history whether in systematic case history form or in piecemeal bits of information and anecdotes. If the clinician is to understand properly the present problem, the circumstances leading up to it and the background factors predisposing toward it must be known. The patient is not always the one who can give the most accurate case history, and many agencies make use of a history prepared by a case worker and based on reports from the patient, his relatives, and associates. The information gleaned from a case history can give the counselor or clinician many leading clues as to incidents and experiences that should be investigated in the interview itself. These provide excellent starting points for the patient to give free associations or simply to discuss his problems. Many times the clinician will feel that he sees the essential problem from the case-history material, and the interview becomes largely a process of helping the patient to clarify the problem for himself and decide what can be done to remedy it.

Another valuable aid to the clinician can be various test results. Insights into the sort of person the patient is can be gained or confirmed by the use of standardized tests. Very few clinicians try to substitute the results of a test or battery of tests for material obtained from the case history and from the patient. They are supplementary to these sources and helpful in determining how to proceed further in the therapeutic process. This is not the place to go into the sorts of tests available and what they attempt to measure. Suffice it to say that there are two general sorts of personality tests in use. (1) The first are those questionnaires or inventories in which the patient answers certain questions. Through a system of scoring the clinician can compare his answers with those of several groups of persons whose personality patterns have been previously ascertained. Representative of this group of tests are the Bernreuter Personality Inventory and the Minnesota Multiphasic Inventory. (2) The second group of tests includes the projective tests in which the patient takes a situation that is not highly structured and structures it. The assumption is that in so doing he will project his own personality into it. Representatives of this group are the Ror-

schach Test consisting of unstructured inkblots and the Thematic Apperception Test consisting of a group of pictures about which the patient tells a story. Each of these is scored in a manner empirically determined so that there is consistency to the scoring system, and interpretations do not depend on the clinician's intuition.

2. *Directed associations.* If the patient relates all or a part of the case history, he will no doubt unload many disturbing facets of his personality. This process of unburdening oneself we have called catharsis and have seen how it can be of some tension-reducing value in and of itself. But it is not enough. The desired insights, understandings of one's motivations and behavior, and plans for action do not come just from the cathartic process. Many clinicians will find the salient and tender spots in this recital and go back to them for further discussion and elucidation. They ask the patient gentle but leading questions about these matters and guide his thinking and talking toward seeing the necessary relationships so that he gains some insight into why he is in the fix he is. In other words, the patient's associations are not left entirely to him; rather the clinician does his best to direct them so that they form a pattern and make sense not only to the clinician but to the patient himself. This process of guidance on the part of the therapist is a very difficult one to master. He must be on the lookout for verbal signs of conflict from the conversation of the patient and for visible signs of sore spots from halting speech, nervous movements, flushing, and the like. Then he must ascertain whether it is the opportune moment to go just a little further in helping the patient verbalize the material giving rise to the stress or whether to let it alone for the time being for fear of putting the patient further on the defensive or making him too anxious. It is generally considered ineffective therapy to force a patient's conversation beyond the point of his own tolerance. To do so takes away from the therapeutic interviews one of its most valuable characteristics, that of complete acceptance of the patient and his story by the clinician. It can be seen that such a clinician needs to be well versed in psychopathology in order to have an understanding of how to deal with each patient's problems most effectively.

3. *Reassurance and information.* There is no universal agreement as to how much reassurance and information should go into a therapeutic interview. There is little doubt that most patients who can profit from counseling need reassurance at many points. The question is whether the clinician can give it to them directly. Many of them have been reassured many times by others—friends and relatives—and yet their fears, anxieties, or somatic symptoms remain with them. The role of the therapist is usually different from that of intimate associates. If the relation is properly established between patient and clinician, the patient does not feel he has to keep up a front, make an impression, or deserve confidence and love as is true with his friends. The clinician's role is taken for granted: he is important and has prestige, to be sure, but more than that he has accepted everything the patient has had to say and is understanding of it. This fact itself tends to give reassurance to the patient that he may have some intrinsic worth. The further subtle reassurances of the clinician can then be accepted, especially as the need for the anxieties and tensions begin to recede. The chief danger in such reassurance, aside from its being given before the patient can emotionally accept and believe it, is that it will involve the patient in a dependent relation with the clinician which will be hard to break later.

Like reassurance, factual information, as objective and correct as it may seem, often cannot be accepted as individually pertinent by many patients. The counselor can tell the patient that he has superior intelligence or that he has the ability to make speeches, and yet if he constantly compares himself unfavorably with others intellectually or gets tongue-tied when trying to recite in class or make a report to his Kiwanis club, he cannot make use of the information even if he believes it. In this case his trouble is probably not in lack of information but in complex fears or other emotional defenses. But there are instances in which lack of information or wrong information have cast doubts in a person's thinking that have resulted in serious tensions and anxieties. Some adolescents have come to believe they are dull because others have labeled them so or because insidious comparisons have been made with favored siblings. Many an adult has had

marital trouble because of improper sexual knowledge, and numerous individuals have considered themselves as different and as outcasts because they have felt that no one else could be in the fix they were or have similar problems. Corrective information can often alleviate some of the tensions that were either aroused or increased by such lack of information or misinformation. Even if the information is not complimentary to the patient—sometimes intelligence test or personality-test scores are not—he has a more firm basis for making judgments, and the uncertainty that he once had may be dissipated. He is then in a better position to make decisions that will keep him out of many embarrassing spots in the future and will help him to compensate for the disabilities he cannot correct.

4. *Environmental manipulation.* The environment rather than the patient may need adjusting. Sometimes environmental pressures are so great that the individual cannot survive without setting up defenses that will mark him as abnormal. Environmental manipulation is more often possible with children than with adults, but many patients have families who would respond in a favorable way if approached properly. So important is the environment in the case of children that many psychological clinics will not work with a child unless one or both of the parents is willing to come for counsel also. Likewise many institutions do their best to see that patients' families understand them and make the necessary changes in their attitudes for their better adjustment. It can be seen that with adults many environmental changes are palliative rather than truly adjustive, but they may make the adjustment on the part of the patient more possible. And even if they do not, some alleviation of symptoms is not to be disparaged.

In many institutions environmental manipulation is accomplished by putting the patient in certain work or recreational groups. Here he may regain some sense of personal worth and find himself accepted by others. Often outside institutions a clinician will attempt to get the patient interested in certain groups or organizations to relieve his feeling of aloneness. This cannot be done until the patient is able to extend himself toward people and may require the help

of a good friend or trusted person, such as a social worker, minister, or some person who merits public confidence.

5. *Re-education.* The final need for patients with personality disorders is a new or changed pattern of life. They have met crises in the past by the use of defense mechanisms which have ended in failure or disintegration. They must learn or be taught some new reaction patterns. Catharsis, suggestion, free association, achieving of insight, reassurance, all should lead the patient to be ready to alter his ways of behaving so that a changed diagnosis is possible. This, of course, may not be re-education but education. Before re-education is possible the patient must have a genuine desire to build new habit patterns, some confidence in his ability to do so, and a trust in the competence of the clinician helping him.

Exhortation and advice often are the means of re-education employed by those who see only that a changed way of reacting is desirable for the patient. What they fail to see is that before the patient can change his way of living he must be able to give up the defenses he has clung to so tenaciously. He must have enough understanding to rid himself of them or the treatment must help to make them unnecessary. Exhortations are practically never used by modern clinicians because they are likely to stir the patient to want to do something about his present situation without in any way making him able to take the initiative in doing so. Advice is very likely to fall on unreceptive ears because it is given from the adviser's point of view rather than from the standpoint of the needs of the patient.

With many patients re-education seems to come almost automatically once they have worked through their problems by means of interviews. They know what direction they wish to take and feel more capable of taking it. The habit patterns they wish to adopt are not unknown to them, but they need some gentle prodding or subtle suggestions as to how to get started. Usually the therapist does not have to take much active part after this. The principles of learning carry on, because as the patient begins to get success in his reactions with others he begins to gain confidence in himself and not have the further need to maintain his former symptoms. In other cases the therapist may decide that the patient will

not be capable of developing a complete self-sufficiency and will help him to detail a carefully worked out program of living based on as much understanding of himself as he can tolerate. This may lead to a semi-dependency relation which would not be desirable if it were felt the patient were capable of going beyond it. The dependence may be transferred from the therapist to a trusted friend, a group, or to a faith in due time.

386. Non-directive interview therapy. Recent work with children in release and relationship therapy has led investigators to apply some of its principles to interview therapy with adults. Outstanding among these has been Rogers (82) who has called this approach non-directive or client-centered therapy. He and his coworkers feel that in treating maladjusted normals and psychoneurotics, at least, the less directing of the interview and of the patient that is done the more chance there is for growth in the independence of the patient. Much of directive therapy is aimed at the problem of the patient in spite of the therapist's claims that he is treating the person. Non-directive counseling would place the entire emphasis on the patient and the problem as he sees it. Case histories assume a place of little if any importance since it is felt that the patient will reveal information and emotional feelings of significance if he is given an opportunity to do so instead of having the interview directed by the clinician. "The significant emotional patterns of the individual, those which serve a purpose in his psychological economy, those which he needs to consider seriously, show up just as well in his present adjustment, and even in the counseling hour, as they do in his past history." (Rogers, 82, p. 29) Releasing expression and feeling and the achievement of insight are fully as important in non-directive as in directive therapy; it is how this is done that is different. Instead of the interviewer suggesting what should be discussed and making any interpretations of what is revealed he acts primarily to reflect and clarify what the patient has already said. His is the completely accepting attitude, to the extent that he does not even try to push the patient into seeing relations that have become obvious to him. If he can accept the patient, and his verbalizations, reflect feelings and attitudes expressed by him

instead of dealing with the content of what he says, it is felt that the patient will go through some definite stages of growth. These include a negative feeling phase in which he expresses dissatisfaction with himself and others, a positive feeling phase in which he can find something good in himself and others, and finally the achievement of insight or seeing old facts in new relationships. The analysis has thus been made by the patient which should mean that he can be less resistive to it and accept it more readily. This the non-directive therapists refer to as a positive growth that occurs during the interviewing and does not have to take place afterward as they claim is the case with much of the more directive type of therapy.

It is too early to make a definite evaluation of the extent to which non-directive therapy is applicable to problems of psychotherapy. It has something definite to offer, and the present research by both proponents and opponents of the method is all to be desired. The method of phonographically recording interviews so that they can be studied later in detail was introduced by the non-directive counselors and has proved to be a very valuable aid in studying the interviewing process.

387. General semantics. Therapeutically, general semantics depends more on its body of theory than on its technique, which is likely to be either individual or group interviewing. Semantics implies a study of the meanings of words to many people, but the general semanticists add to this meaning the evaluations made on the basis of words. Such evaluations may be principally either intellectual or emotional but never one *without* the other. Making such either-or categories out of actually unitary phenomena is one of the chief errors we make and is responsible for many misunderstandings and maladjustments. General semantics' approach to a study of human behavior—both normal and abnormal—is an organism-as-a-whole approach, especially applied to our symbolic life.

Sanity is considered as correct evaluation and mental illness as misevaluation. A frequently given analogy is that of the map and territory. If correct evaluation is to occur the map must accurately represent the territory to be depicted;

otherwise prediction is impossible, and actions based on the use of the map will lead one astray. Maps do not, however accurate, represent *all* the territory. They show only the parts significant for the user of the map; and finally a true map would be self-reflexive, because it would show a "map-of-the-map" in the territory. Similarly, a word is not the fact, object, or relation which it represents; neither does it include all the properties or characteristics of that fact, object, or relation; and language, too, is self-reflexive, in as much as we can speak about language. Now, very often in our talk about language we delude ourselves and identify the talk with the actuality. When we do so we are letting ourselves in for misevaluation and maladjustment. In more neurological terms what we do is to identify our own judgments, feelings, emotions with a word instead of letting it actually represent the "territory"; then we assume that the interpretation we have put on it represents all the territory. In so doing we are acting more at a thalamic level than at a cortical level; particularly are we failing to integrate properly thalamic and cortical levels of action. This integration into a oneness is to be highly desired, and the therapy of general semantics aims at its accomplishment.

Therapy is a sort of by-product of learning to use the chief tool of general semantics which is called extensionalization. Typically, the patient is taught to understand the principles of general semantics and then how to use them properly. Re-education of a particular sort is the chief therapeutic weapon of general semantics and may be achieved frequently in groups, members of which are attending seminars conducted by general semanticists. This re-education process, called extensionalization, is essentially one of teaching the patient the errors in his thinking when he identifies language (or other) symbols with the actual events or overgeneralizes and acts accordingly. There are five chief extensional devices or techniques for aiding in this process. The patient must be sufficiently motivated to work hard at applying these devices to his own thinking, feeling, and acting.

The first device is called *indexes*. By this is meant the pinning down of generalizations to specific referents. "Women are more intuitive than men" is too general and may lead to

confusion unless the speaker and the hearer realize that the terms women and men refer to many different individuals and that each one of them must be properly considered in making such a statement. In addition intuitive needs further consideration and indexing if confusion is to be avoided.

The second device is called *dates*. Its essential implication is the realization that change is the most characteristic property of everything. Neither any thing nor any person is exactly the same from one day to the next. The general semanticist tries to help the person to react to words representing situations in light of the fact that the underlying situations may have changed since he last attached meaning to them. I may have met Mr. Jones at a time when he was depressed over a financial loss and have come to regard him as crabby and hard to deal with. The next time I have contact with him he may have recovered his equilibrium and be quite congenial; yet unless I date Mr. Jones, realize that he or his name as a symbol of him should not necessarily arouse the same reaction in me today as it did several months ago, I am likely to try to deal with him as a crabby old duffer.

The third device useful in extensionalization is *Et-ceteras*. The use of *etc.* at the end of a sentence or phrase reminds the reader or hearer that there is more to be said than has been said. The use of *etc.* implicitly in our language will serve to remind us that the word may not accurately describe all the aspects of the object or situation and certainly not all the unspoken and perhaps unrealized affective and judgmental reactions to it.

The fourth device, *hyphens*, points up the organismic approach of general semantics. Korzybski and his followers point out that we verbally break up many things into entities which in reality are unitary or at least operate in a unitary fashion. Examples would be the separation of mind, body, intellect, and emotion. We assume that because we can separate them verbally they are also functionally separate. No such thing is the case, and a part of extensionalization is the using of hyphens in our writing and thinking when we speak of mind and body: for example, mind-body.

The final device most commonly discussed in semantic

writing is called *quotes*. It is quite closely related to hyphens. If we find it necessary to talk about emotions, for example, we should constantly remind ourselves that they are not actually elemental by enclosing the term either actually or mentally in quotation marks, thus: "emotions."

This brief discussion is inadequate to represent general semantics properly, and the reader is referred to more complete writings in the field if he is interested in pursuing the topic further. It can be seen that many principles of learning might be applied to the process of extensionalization and that superficially applied the process might be more harmful than beneficial. General semanticists seem to have recognized this fact since they usually go so far as to say that one cannot really understand general semantics and its therapeutic effects without having studied it intensively at the hands of an expert. Various claims have been made for its effectiveness in therapy, most of them being quite favorable when made by semanticists. It seems likely that what beneficial results occur do so chiefly with the maladjusted and psychoneurotic more often than with the psychotic.

388. Narcoanalysis and narcosynthesis. More related to the directive than to the non-directive methods of interviewing is the use of certain barbiturate drugs to help the patient to reveal repressed or dissociated material. World War II saw the use of this method in certain theaters with men suffering from anxiety and conversion hysteria symptoms particularly. (Grinker and Spiegel, 34; Hoch, 39) The most commonly used drugs are sodium amytal and sodium pentothal which are injected into the patient. If not too large doses are given he drowns off into a sort of dreamlike or hypnagogic state in which a dynamic relation with the therapist can be maintained. He seems free to talk about many things he has had to keep repressed before and may relive with great energy certain forgotten experiences. Two procedures are in common use: (1) The interviewer reassures the patient that his anxiety or other difficulties can be controlled and explains to him the relation between his symptoms and his past experiences and emotional attitudes. (2) More used is a process of free association wherein the patient is urged to go back to the emotional storm centers of his life so that they

can be relieved and resynthesized into his personality. The synthesizing process may be done partly in the sedated state caused by the drug or afterward.

There is general agreement that this is largely a psychotherapeutic rather than a specific drug effect. In fact many speak of narcosynthesis or narcoanalysis as adjuncts to psychotherapy. They hasten the process (or sometimes make it possible) of getting at the emotional repressions which must be accepted and integrated again into the personality. (Kubie and Margolin, 55) There has not been sufficient time to judge the effectiveness of these techniques in civilian life although some use has been made of them both before and after World War II. There is some indication that they may be limited in value since they were most effective with anxiety states and conversion hysterias and not so useful in psychasthenic states and passive sorts of personalities in whom there is little anxiety present. (Greiber, 32) These make up a rather large proportion of the psychoneurotics seen in civilian practice.

389. Common factors in psychotherapies. Nearly all forms of psychotherapy have many successes as well as failures to their credit. Their successes do not prove that the theory or practice of the method involved is correct. They merely testify that something has happened which has been of therapeutic value. Human beings and their personalities are so complex that there might be several ways in which they can be approached and treated, and that the use of any of them would produce some therapeutic results. (Rosenzweig, 84) Further there may be several points at which all therapies are in some agreement in practice if not in theory.

In 1940 Goodwin Watson (105) summarized the areas in which nine psychotherapists found themselves in agreement in practice. These were some of their conclusions:

1. The relation between patient and therapist is important. We have seen this implied in all the psychotherapies discussed. The role that the clinician feels he has and how he gets that across to the patient determine the direction the therapy will take.

2. The patient should get some understanding of himself and be able to deal with reality.

3. The responsibility for choosing courses of action should be on the patient in so far as possible.

4. Catharsis alone is insufficient to produce effective therapeutic results.

5. Advice and exhortation have not given good results in achieving any of the positive goals of therapy.

6. The specific techniques of the therapist should be flexible enough to vary with the needs and personalities of different patients and also with the personality of the therapist.

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APPENDIX I

The classification of mental disorders as adopted by the American Psychiatric Association tends to use the causal basis for those disorders that can be traced clearly to organic or physiological factors, and to fall back upon a behavioral classification in dealing with others. The main groupings as used in this official classification are as follows:

I. Organic disorders.

- A. Psychoses due to or associated with infection: Syphilis, meningitis, encephalitis, or other infectious diseases.
- B. Psychoses due to intoxication: Alcohol, metals, gases, opium, and other drugs.
- C. Psychoses due to trauma.
- D. Psychoses due to disturbance of circulation: Cerebral embolism, cerebral arteriosclerosis, cardio-renal, etc.
- E. Psychoses due to convulsive disorders (epilepsy).
- F. Psychoses due to disturbance of metabolism, growth, nutrition, or endocrine function: Senile psychoses, involutional psychoses, and psychoses associated with diseases of the endocrine glands, nutritional imbalances, and other somatic diseases.
- G. Psychoses due to new growth.
- H. Psychoses due to unknown or hereditary causes, but associated with organic changes.

II. Functional disorders. Those with psychogenic origin or without clearly defined tangible cause or structural change.

A. Psychoneuroses.

1. Hysteria.

- a. Anxiety hysteria. A condition in which a repressed conflict expresses itself in the form of a morbid fear of some definite external object, or the dread of some disease. Only those cases of morbid fear and anxiety who utilize such emotional behavior to conceal an internal conflict are placed in this group.
- b. Conversion hysteria. A condition characterized by the simulation of some disease or disability. It differs from malingering in that the latter is supposed to be a deliberate act of deception, while hysteria appears without the conscious intent of the patient. If the important

aspect is anxiety, the case is diagnosed as anxiety hysteria; if emphasis is given by the patient to the simulated symptoms of disease, the diagnosis is conversion hysteria.

- (1) Anesthetic type. Patient becomes functionally blind, deaf, or otherwise insensitive.
 - (2) Paralytic type. Patient develops a functional paralysis of arms, legs, eye muscles, speech apparatus, or other parts of the musculature.
 - (3) Hyperkinetic (overactive) type. Patient manifests tremors, convulsions, speech spasms, and the like.
 - (4) Paresthetic type. Patient manifests disorders of skin senses, such as diminished sensitivity, heightened sensitivity, "pins and needles," crawling sensations, etc.
 - (5) Autonomic type. Patient manifests excessive sweating, swellings, ulceration, and the like.
 - (6) Amnesic (memory) type. Patient manifests forgetting, sleep-walking episodes, trances, delirious conditions, or stupors.
 - (7) Mixed types showing combinations of the above.
2. Psychasthenia or compulsive states. Patients are classified under this heading who manifest obsessions (uncontrollable impulses to dwell on certain thoughts), compulsions (irresistible tendencies to perform inappropriate acts), fears, and extreme tendency to delay decisions.
 3. Neurasthenia. Individuals who definitely have no organic basis to account for their condition but who, nevertheless, complain of fatigue, inability to concentrate, pressure on scalp, neck, or spine, and nervous exhaustion.
 4. Hypochondriasis. Under this heading are classified those cases who are preoccupied with the state of their health or of various bodily organs.
 5. Reactive depression. This name is given to those cases who show an excessive and more lasting emotional depression than is normal to obvious external causes which might naturally produce sadness.
 6. Anxiety state. Individuals classified in this category show more or less continuous apprehension with physiological signs of fear, palpitation, nausea, or diarrhea, with emotional tension, irritability, and intense preoccupation with real or fancied troubles.
- B. Manic-depressive psychoses. These patients manifest emotional oscillations that have a tendency to recur. There are several distinguishable forms:
1. Manic type. Characterized by elation (or irritability), talkativeness (flight of ideas), and increased motor activity.
 2. Depressive type. Characterized by emotional depression, mental retardation, and a slowing of motor activity.

3. Circular type. Here are classified those individuals who swing between mania and depression with little or no interval of normality between.
 4. Mixed types. In this category are placed those persons who show a mixture of the cardinal symptoms of mania and depression, such as elated depression, or manic stupor.
 5. Perplexed type. In combination with their manic or depressed symptoms, these patients show an inability to understand their surroundings, and their place in them.
 6. Stuporous type. The stuporous individual is characterized by a marked reduction in activity, at times leading to immobility. There is often mutism and a dreamy indifference to surroundings.
- C. Schizophrenia (*dementia praecox*). A prominent feature of patients placed in this group is a slow, progressive deterioration of the entire personality, during which there is an increasing withdrawal of interest in or lack of adjustment to the environment.
1. Simple type. Cases classified as simple schizophrenia show a progressive apathy with little other peculiar behavior.
 2. Hebephrenic type. Hebephrenics show increasing disintegration between their emotional expression and other aspects of life. This manifests itself in silliness, inane smiling or laughter, bizarre ideas, meaningless verbalizations, and ridiculous gestures.
 3. Catatonic type. The characteristic behavior of the catatonic is a breaking off of response to outward influences to such a degree that he has the appearance of being stubborn.
 4. Paranoid type. Along with the personality deterioration these patients have delusions, usually of a persecutory or grandiose nature.
- D. Paranoia. (*True paranoia*). In this classification are placed those individuals who seem to maintain their personal integration and intelligence but who manifest fixed suspicions and ideas of persecution which are buttressed by facts that are true in themselves but are given false emphasis. Depending upon circumstances, they may be regarded as reformers, agitators, or prophets.
- III. Behavior disorders without psychosis and without psychoneurosis.
- A. Psychopathic personality. In this group are placed those individuals who, though normal in intelligence, seem emotionally immature and childish. They are prone to impulsive acts without consideration of the rights of others. Depending upon circumstances, different individuals may become criminals, vagabonds, sexual perverts, or may remain within the law while carrying on their exploitations of others. They seem to have little or no moral sense in the accepted meaning of the term.
 - B. Primary behavior disorders. Individuals who have no symptoms of a psychosis, functional or organic, who are not psychopathic

personalities but who, nevertheless, have such a limited amount of adaptability that they must depend upon others to get them out of one mess after another, are placed in this group. The existence of such a group as this in a classification scheme of mental disorders is a confession that there are queer persons whom we do not understand.

C. Mental deficiency.

APPENDIX II

GLOSSARY

The statements following each word of the glossary should not be thought of as complete and inclusive definitions but as cues to the full meaning as discussed in the text. The most useful meaning for abnormal psychology is the one given where a word has a number of usages.

Abnormal. Widely divergent from the norm or type.

Abreaction. Giving expression to the emotion connected with a repressed experience that has been remembered.

Accommodation. Changes in the lens of the eye which bring objects into better focus.

Acuity. Sensitivity.

Adjustment. The varying of responses to changed conditions of stimulation. Some imply an effective response.

Affective. A generic adjective used to connote any variety of feeling or emotional experience.

Afferent. Conducting inward. Afferent nerves are those that conduct nervous impulses toward the spinal cord or brain. Opposed to efferent.

Agnosia. Inability to recognize familiar objects or sounds.

Agraphia. A pathological inability to write.

Alexia. A pathological inability to read.

Alimentary. Pertaining to food.

Allopsychic delusion. A delusion that assigns to others intentions or actual influences, due to projection of one's personal maladjustment.

Alpha wave. The tracing made by amplifying the normal waking electrical activity of the brain.

Amaurosis. Loss of sight due to defect of the optic nerve, which is not accompanied by any perceptible change in the eye itself.

Ambivalence. Simultaneous existence of contradictory and contrasting emotions toward the same person.

Amenorrhea. Lack of menstruation.

Amentia. Inferior mental ability which has been present since birth.

Amnesia. Inability to remember events during a period of time, which one would normally remember.

Amnesic aphasia. Inability to get the right word to name an object or condition.

Amplitude. Height of a wave formation.

Anesthesia. A loss of sensitivity.

Anomaly. Irregularity.

Anorexia nervosa. Loss of appetite accompanied by a decided distaste for food.

Anoxia. Pathologically low concentration of oxygen in the blood.

Anxiety. An emotional attitude toward the future combining dread and hope; a very strong apprehensiveness.

Apathy. Pathological emotional indifference.

Aphasia. Pathological impairment of the ability to use or understand language.

Apraxia. Inability to perform skilled movements in the absence of paralysis.

Argyll-Robertson pupil. A pupil (of the eye) which reacts in accommodation but not to light.

Arrhythmia. Without rhythm.

Astasia-abasia. Functional inability to stand or walk, without evidence of reflex disorders or loss of other uses of the limbs.

Astigmatism. A defect of a lens in consequence of which the rays of light from one point are not brought to a single focal point.

Ataxia. A loss of muscular coordination.

Atonicity. Lack of tonus.

Atrophy. Wasting or shrinking of bodily tissues.

Audiometer. An instrument by which auditory acuity can be measured.

Auditory. Pertaining to the ear or to sound stimuli.

Auditory aphasia. A form of aphasia in which the individual cannot understand what he hears.

Anterograde amnesia. Inability to remember events that immediately followed a trauma.

Autistic thinking. Pleasure thinking that is not subjected to criticism and is not made to conform to reality; wishful thinking.

Autoerotism. Sexual activity which is self-generated and directed toward oneself.

Autointoxication. Poisoning caused by some toxin generated within the body and not eliminated.

Automatic writing. Writing produced with diminished or with no conscious control.

Autonomic. Having independent functions; self-governing.

Bestiality. Abnormal erotic attachment for animals.

Biochemical. Pertaining to branch of chemistry relating to life processes, their actions, and products.

Blocking. An impassable break in a chain of associations.

Cannabis indica. Indian hemp, from which is extracted *cannabin*, a resin that provides the active narcotic effect of *hashish*.

Cardiazol. Another term for the drug, metrazol.

Catalepsy. A state of retention of position of parts of the body where placed; muscular rigidity.

- Catatonia.** A diseased condition in which the skeletal musculature remains in any position in which it is passively placed. One variety of schizophrenia.
- Categorical attitude.** The ability of the organism to deal in abstractions and classifications.
- Catharsis.** Emotional relief obtained through the recall of a repressed experience, often achieved through "talking it out."
- Cerea flexibilitas.** Muscular rigidity or waxy flexibility. Catalepsy.
- Cerebral arteriosclerosis.** Hardening of the arteries of the cerebrum.
- Cerebral cortex.** The outer layer of the cerebrum.
- Cerebrum.** The large hemispheres of the brain which fill the entire upper portion of the skull.
- Chorea.** Commonly called St. Vitus' dance. A condition characterized by jerky, irregular movements involving considerable parts of the musculature.
- Chronic alcoholism.** Physical and mental disorder following excessive alcoholic drinking over a long period of time.
- Circumstantiality.** The exact reproduction of associational sequences as they occurred in the previous life of the individual.
- Climacterium.** Change of life from middle to old age.
- Clonic.** Irregular reflex contraction of a muscle.
- Coma.** Loss of consciousness with deep insensibility and loss of reflexes.
- Compensation.** A psychic mechanism by which an individual covers up or disguises an undesirable or unwanted trait by calling into play a desirable one, and exaggerating its manifestations.
- Complex.** A system of ideas that are held together by certain affective ties.
- Compulsion.** The performance of an act in spite of the performer's conscious intention to refrain from such action.
- Concomitant.** Accompaniment.
- Confabulation.** Substituting one experience for another in memory, without regard for time sequences.
- Congenital.** Present at birth.
- Constitutional.** Hereditary and fixed to the degree that behavior is determined or predisposed thereby.
- Controlled association.** Giving one's association to a specific stimulus.
- Convulsion.** A violent contraction of an extensive group of muscles.
- Cornea.** The transparent covering of the front of the eyeball situated in front of the iris.
- Counseling.** Process of helping people solve conflicts or problems largely through interviewing.
- Crank.** An antisocial person who has no feelings for others.
- Cretinism.** A condition that appears in early childhood, due to thyroid insufficiency and characterized by mental deficiency and physical anomalies.

Curare. A depressive drug which paralyzes motor nerve ends.

Cutaneous. Pertaining to the skin.

Dearth. Very small amount.

Dehydration. Process of removing water.

Déjà vu. Feeling of familiarity in a strange situation.

Delirium. A state of mental disturbance, marked by hallucinations, disordered speech, restlessness, and dreamlike incoherent motions.

Delirium tremens. Severe symptoms of tremors and delirium as a result of excessive alcoholic drinking.

Delta wave. The tracing made by amplifying the electrical activity of the brain during sleep.

Delusion. A false belief.

Delusion of grandeur. A false belief that a person is more important than he is or that he is an important person.

Delusion of persecution. A false belief that one is being maltreated or persecuted.

Dementia paralytica. Same as paresis.

Dementia praecox. Synonym for schizophrenia.

Depression. Retardation of mental and motor processes; pathological state of sadness.

Depressive psychopath. A non-psychotic, pessimistic person who has an antisocial attitude.

Deterioration. Loss of mental efficiency.

Dietetics. That department of medicine or hygiene which relates to diet.

Dilantin. A drug used in the treatment of epilepsy.

Diminution. State of being diminished; a decrease.

Disintegration. A state of being broken apart or shattered.

Disorientation. A condition in which the individual loses the usual perception of spatial relations (spatial disorientation), of the passage of time (temporal disorientation), or of his personal relationships or associations (social disorientation).

Diurnal. Daily.

Dynamometer. Apparatus for measuring force; in psychology a hand dynamometer is used to measure strength of grip.

Dysfunction. Abnormal functioning.

Dysrhythmia. Abnormal rhythm.

Eccentric personality. A person with odd, peculiar, but not harmful behavior.

Efferent. Conducting outward. Efferent nerves are those that conduct nervous impulses from the brain or spinal cord. Opposed to afferent.

Ego. The self. According to Freud, the Ego is the part of the personality that mediates between the Id and the external world of reality.

Egocentric. Disposed to dwell on oneself and to view every situation from a personal angle. Self-centered.

Eidetic image. A clear image (usually visual) which a person (usually a child) experiences as though it were objective, although recognized by him as subjective.

Elation. A condition in which an individual reports intense pleasure and a feeling of buoyance, and manifests emotional excitement and increased activity.

Electroencephalography (EEG). The study of the electrical activity of the brain, or "brain waves."

Encephalitis. A pathological condition characterized by inflammation of the brain substance or of its coverings.

Epilepsy. Convulsive seizure.

Erogenous zones. Sensitive regions of the body whose stimulation gives rise to erotic excitement.

Erotic. Pertaining to sexual love.

Etiology. The assignment of a cause or reason.

Euphoria. Extreme (often unfounded) feelings of well-being.

Excretory. Relating to or serving for excretion or elimination.

Exhibitionism. A compulsive tendency to make an inappropriate display of erogenous zones, often seen in any kind of excessive personal display.

Experimental neurosis. Seemingly neurotic behavior induced experimentally in animals.

Expressive aphasia. Language disorder seen in improper motor expression, as *agraphia*.

Extensionalization. A technique for seeing the proper relationships between symbols (words) and what they stand for, used by General Semanticists.

Fetishism. Anomaly in which erotic behavior is stimulated by articles (such as handkerchiefs, lingerie, shoes) or parts of the body (such as the hair) which usually do not function as love stimuli.

Fistula. Narrow passage or duct (usually formed by disease or injury), leading from a body cavity to the surface.

Flaccid. Without normal tonus.

Flight of ideas. A series of ideas with little connection among them, often suggested by unrelated environmental stimuli.

Fovea. A small depression in the yellow spot, in the central region of the retina, where vision is clearest.

Free association. A sequence of associations unhampered by limiting instructions or predisposing conditions.

Frigidity. Inability to experience sexual pleasure; usually used only with reference to a woman.

Frontal lobe. A lobe of the cerebral cortex.

Frustration. Thwarting of motivated or goal-directed behavior.

Fugue. A flight. Used to designate an extended episode of acting as a different person in which the subject does not appear abnormal to superficial observation.

Functional. Affecting the action rather than the structure of an organ.

Ganglion. A grouping of nerve cells; a nerve center.

Genetics. A branch of biology which investigates heredity, variation, and evolution.

Grand mal. A severe epileptic convulsion.

Gustatory. Pertaining to the sense of taste.

Hallucination. A perception of objects with no reality, or a perception which is such a gross misinterpretation as to have little or no apparent relation to the objective stimulus.

Hate. An emotionally intense dislike.

Hebephrenia. A type of schizophrenia (or dementia praecox) characterized by silly manneristic behavior.

Hemianopia, hemianopsia, or hemiopia. Blindness in one half of the visual field consequent upon loss of sensitivity in corresponding areas of both retinas.

Haemorrhage or Hemorrhage. Discharge of blood from a blood vessel; bleeding.

Homeostasis. A name given to the unstable equilibrium maintained by the body in regulating its internal functioning.

Homosexuality. Erotic behavior between members of same sex.

Hormone. A chemical substance formed in one organ and carried in the circulatory fluid to other organs on which it exerts specific effects; usually associated with the endocrine glands.

Hydrocephaly. The condition resulting from an abnormal accumulation of fluid within the cranium, either in the ventricles or outside the brain, often resulting in enlargement of the head and in mental defect.

Hydrotherapy. Treatment of disease by the use of water, as in hot baths, needle showers, etc.

Hyper-. Prefix meaning high degree; excessive.

Hyperacute mania. The most severely excited manic state; delirious mania.

Hyperkinetic. Pertaining to excessively vigorous motor activity.

Hypermnnesia. Unusual or exaggerated degree of retentiveness or recall.

Hyperopia. Farsightedness. A defect of the eye structure or lens mechanism such that rays of light are brought to a focus behind the retina.

Hypertonicity. High, continued degree of contraction of a muscle.

Hypnosis. An artificially induced state, usually resembling sleep, which is characterized by heightened suggestibility.

Hypo-. Prefix meaning a low state or deficient degree; insufficient.

Hypochondriasis. A morbid condition characterized by morbid anxiety about the state of one's health, with the exaggeration of every trifling symptom.

Hypoglycemia. A condition in which blood sugar content is abnormally low.

Hypokinetic. Pertaining to subnormal vigor of motor responses.

Hypomania. The mildest form of mania.

Hypothalamus. A part of the brain, associated in psychology with emotion.

Hysteria. A type of psychoneurosis in which the patient disguises his difficulties by distracting the attention of himself and others to the symptoms of some physical disease which may be partially or wholly fictitious.

Id. According to Freud, the Id is the primal structure of mental life upon which all the rest is built.

Identification. Identifying oneself with another person or group and assuming as one's own the characteristics of that person or group.

Ideomotor. Actions initiated by ideas.

Idiopathic epilepsy. Epilepsy for which there is no known organic basis.

Idiot. A feeble-minded individual who manifests the lowest grade of mentality comprising those with intelligence quotients from 0 to 25.

Illusion. A perception that contains some misinterpretation of certain elements in a given objective situation.

Imbecile. A person with an intelligence quotient between 25 and 50.

Incoherence. Lack of orderly or systematic connection of parts.

Inebriate. One given to drinking alcoholic beverages to excess.

Inflammatory. Marked by fever, pain, swelling, and usually redness of a tissue.

Inhibition. The partial or complete arrest of an already active function.

Insight. Realization and understanding by a patient of his own mental conflicts.

Insulin. Hormone secreted by the islets of Langerhans in the pancreas.

Integration. Process of unifying or organizing parts to make a functional whole; wholeness.

Intelligence quotient (I.Q.). An index of the intellectual brightness of a person when compared to average people his own age.

Interview. Meeting for conference or consultation, in which information is given and/or obtained.

Introjection. Attributing to oneself the qualities one finds in others so that one can identify oneself with them.

Inversion. The assumption by members of one sex of the characters or role of the other sex. Homosexuality.

Invert. One whose erotic interests are toward members of his own sex. A homosexual.

Involution. (In biology) degeneration; declining development.

Involucional melancholia. A severe depression occurring, without previous history of mental disorder, after the age of about 45.

Ketogenic diet. A diet rich in fats and low in carbohydrates and proteins. Often prescribed for epileptics.

Kinesthetic. Pertaining to the sense of movement, derived from nerve endings in the tendons, muscles, and joints.

Kleptomania. An irresistible, compulsive tendency to steal.

Larynx. Voice box.

Latent content. The hidden, true content of a dream.

Lesion. Any morbid change in living organs, usually due to injury or disease.

Lethargy. Sluggishness in activity.

Levitation. The illusion of moving heavy objects in the air without support; also, the subjective illusion of moving through the air without support, as in dreams.

Lobectomy. The removing of a portion or all of a lobe of the brain.

Lobotomy. The severing of connections between a lobe of the brain and underlying tissues.

Localized amnesia. Inability to remember all the events of a particular period of time.

Macrocephaly. A pathological condition characterized by an excessive enlargement of the head.

Mania. Excitement.

Manic-depressive psychosis. A type of mental disorder characterized by marked oscillations between emotional exaltation and depression, or the continuation of either of these.

Manifest content. The apparent, but not true, significance of a dream.

Masculine protest. The desire for masculine superiority, resulting from the identification of inferiority with femininity. A term proposed by Adler.

Masochism. A type of sexual perversion characterized by pleasure in being physically maltreated.

Melancholia. A state of profound emotional dejection.

Meningitis. Inflammation of the *meninges* or membranes which cover the brain and cord.

Mental age. A term used to designate the level of intellectual growth reached by a person at a given time.

Mescal. A preparation of the cactus, *Anhalonium Lewinii*, possessing peculiar narcotic properties.

Mesmerism. Artificial sleep thought to be induced by animal magnetism.

Metrazol. A drug used to induce convulsions in the treatment of mental disorders.

Microcephaly. A pathological condition characterized by exceptional smallness of the head.

Mongolism. A type of amentia so named (by Langdon Down) because of the fancied presence of Mongolian facial characteristics.

Moral defective. A person with normal intelligence whose moral actions reflect poor judgment.

Morbid. Unhealthy.

Moron. A person with an intelligence quotient between 50 and 70.

Motility. Movement.

Motor. Pertaining to the muscles or glandular activity.

Multiple sclerosis. A disease marked by sclerosis or hardening of various spots in the brain and cord.

Mucosa. A mucous membrane, such as the lining of the nose, stomach, etc.

Multiple personality. Dissociation involving two or more independent personalities within the same individual.

Mutism. Lack of development of the speech function. Dumbness.

Myopia. Nearsightedness. A defect of the eye structure or lens mechanism such that rays of light are brought to a focus before they reach the retina.

Narcissism. Self-love.

Narcoanalysis. An analytical interview with a patient who is under the influence of a narcotic drug.

Narcolepsy. A disorder characterized by irresistible spells of sleep.

Narcosynthesis. Similar to narcoanalysis, which see.

Neologism. The coinage of new words not in common or literary use.

Neurasthenia. A mental disorder in which the patient complains of weakness, lack of vitality, loss of ambition, and "nervous exhaustion."

Neurosis. A functional disorder without apparent change of nerve structure. This term is commonly used to designate minor mental disorders, as distinguished from psychosis which is commonly used to designate the more severe mental diseases.

Nihilistic delusion. The professed belief of a person that he has no existence.

Nonsense syllable. A combination of letters which can be pronounced but which has no meaning.

Nymphomania. Abnormally high degree of eroticism in a woman.

Nystagmus. Quick involuntary oscillatory movements of the eyes.

Obsession. The obtrusive presence in a person of an unwelcome and unreasonable persistent idea.

Occupational therapy. Treatment through giving the patient something to do of an occupational sort.

Ocular. Relating to the eye or eyesight.

Olfactory. Pertaining to the sense of smell.

Ophthalmoplegia. Paralysis of the eye muscle.

Organic. Pertaining to structure.

Paramnesia. Distorted memory.

Paranoia. A mental disorder characterized by fixed and systematized delusions, usually of a persecutory or grandiose nature.

Paranoic. A person affected with paranoia.

- Paranoid schizophrenia.** A form of schizophrenia in which unsystematized delusions constitute a primary symptom.
- Paresis.** A disease resulting from the invasion of the brain by the specific microorganisms (spirochaetes) of syphilis and characterized by grave memory and judgment defects, speech disorder, and tremor and reflex alterations.
- Patellar tendon.** The tendon just under the kneecap.
- Pathological.** Pertaining to diseased as distinguished from normal conditions of the organism.
- Pathological liar.** A person who fabricates compulsively.
- Pedophilia.** A type of sexual perversion characterized by love for immature children.
- Pelvis.** Girdle of bones (the hipbones, etc.) forming a framework for the lower part of the abdomen.
- Perception.** A mental integration that has sensory experiences as its core.
- Performance test.** A test of intelligence in which language is at a minimum.
- Perimeter.** An instrument used in charting the color zones of the eye.
- Periphery.** Boundary line; surface of a body.
- Perseveration.** The tendency of a response, once given, to be continued or repeated even when such behavior becomes incongruous.
- Perversion.** A socially disapproved deviation from the normal pattern of satisfying a basic drive or need, often restricted to the sex drive.
- Petit mal.** A mild epileptic convulsion, or momentary loss of consciousness.
- Phantasy, or fantasy.** A variety of imaginary activity in which combinations are effected which are highly fictitious but which are satisfying to the subject.
- Phobia.** An exaggerated and usually pathological fear or dread of some specific situation or type of stimulus.
- Physiotherapy.** The treatment of disorders by physiological exercises, massage, and manipulation.
- Pituitary gland.** A small compound endocrine gland situated at the base of the brain, secreting a hormone which assists in regulating bony growth, fat distribution, and blood pressure.
- Play therapy.** The use of play in the treatment of children's personality difficulties.
- Prefrontal lobe.** A lobe of the cerebral cortex near the forehead.
- Presbyopia.** A condition of the eye due to inelasticity of the lens, with consequent restriction of accommodation, which develops with advancing age.
- Prognosis.** Prediction of outcome.
- Projection.** The attributing to others of the emotions, motives, and ideas which the subject actually possesses himself. Usually these are rejected by the person as belonging to him.
- Projective technique.** A method for studying personality in which

the subject reveals basic attitudes, conflicts, and desires through reactions to relatively standard situations.

Psychasthenia. A psychoneurosis characterized by obsessions, compulsions, phobias, and indecision.

Psychoanalysis. A technique, originated by Sigmund Freud, for investigating the mental life of a person by means of an analysis of his dreams, his free associations, and his blunders. It is sometimes used to include, in addition to this technique, the dynamic system of psychology developed by Freud.

Psychodrama. A therapeutic device utilizing the acting out of a conflict or activity by the patient.

Psychogenic. Of functional rather than organic origin.

Psychoneurosis. A mental disorder which is not as severe as a psychosis. A minor mental disorder. It is sometimes used as a synonym for neurosis.

Psychopathic personality. A maladjusted person who has characteristics of an antisocial variety not fully described by either neurosis or psychosis.

Psychosomatic. Pertaining to the mutual relationships and unity of body and mind.

Psychotherapy. Treatment of mental disturbances by means of psychological or psychiatric methods.

Pyromania. A compulsive tendency to the malicious burning of property.

Rapport. Intimate and friendly, or at least unconstrained, relation between two persons.

Rational. Based upon or conducted according to correct or valid reasoning.

Rationalization. The mental process of devising ostensible reasons to justify an act or opinion which is actually based on other grounds, although these may not be apparent to the rationalizer.

Reaction formation. Doing the opposite of what one really wants to do to protect oneself from recognizing unwanted desires.

Reactive depression. A depression, more neurotic than psychotic, in which the patient remains depressed for an unduly long time over an incident normally arousing transitory sadness.

Recall. The conscious reinstatement of a past experience.

Receptive aphasia. Language disorder due to improper reception of the stimulus.

Reflex. An immediate definite response to a sensory stimulation.

Regression. The act of reverting to a more primitive level of behavior in order to avoid making adjustments to the complexities of the present.

Remission. Period of marked improvement or normality during the course of a mental disease.

Repression. The mental process by which ideas that conflict with the dominant trends of an individual are forced from consciousness.

Retardation. Slowing down.

Retrograde amnesia. Inability to remember events that immediately preceded a trauma.

Reverie. A kind of daydream.

Rorschach Test. A test devised by Hermann Rorschach, composed of ten ink blots to which the subject gives his free associations.

Sadism. A type of sexual perversion characterized by pleasure in maltreating others.

Satyriasis. Abnormally high degree of eroticism in a man.

Schizophrenia. A term used to replace dementia praecox. It is a mental disease characterized by an extreme disorganization of the emotional life, hallucinations, fantastic delusions, personality disintegration, with relative intellectual preservation.

Scotoma. A blind or partially blind area of the retina.

Semantic. Pertaining to language, with particular reference to meaning.

Senile dementia. A psychosis accompanying physiological changes occurring in old age.

Shock therapy. Treatment of mental illness by methods inducing profound shock or convulsions, such as with insulin, metrazol, or electric shock.

Sibling. One of two or more children of the same parents born at different times.

Simulation. Imitation.

Skeletal. Relating to the skeleton.

Somatic. Pertaining to the body.

Somnambulism. Sleepwalking. A state in which an individual asleep performs actions appropriate to the waking state.

Spasm. Involuntary, rigid contraction of a muscle or muscle group.

Spasticity. Hypertonicity of a muscle, usually resulting in spasms.

Stanford-Binet. A standardized, individual test of intelligence.

Stereognosis. Ability to recognize objects by touching or "feeling" them.

Stereotypy. The tendency toward endless repetition of fragmentary or apparently senseless words, apparently useless movements, or of certain postures.

Strabismus. A lack of coordination of the eye muscles so that the two eyes do not focus on the same point.

Stupor. Extreme apathy or lethargy, often involving partial or complete unconsciousness.

Stuttering. A speech disorder characterized by spasmodic interruption and convulsive repetition of initial sounds. Stuttering and stammering are often used synonymously.

Subcortical. Situated under or beneath the cerebral cortex.

Suggestibility. A more or less permanent susceptibility to suggestion.

Symbol. That which stands for something else and serves either to represent it or to bring to mind one or more of its characteristics.

Symptom. Any structural change, functional peculiarity, or other phenomenon which points to the presence of a disease or disorder in a given individual.

Syndrome. A term denoting the collection of symptoms which characterize a particular disorder or disease; a symptom complex.

Synesthesia. A phenomenon experienced by some individuals in which certain sensations (such as color) belonging to one sense, appear regularly whenever a stimulus (such as a certain sound) from another sense field is received.

Systematized amnesia. Inability to remember a group of related associations.

Systematized delusion. A delusion so carefully worked out as to appear reasonable and which has become so real to the patient that he acts in conformity with it.

Tabes dorsalis. A syphilitic disease of the posterior columns of the spinal cord resulting in gross motor incoordination.

Tactile. Pertaining to the sense or organs of touch.

Thalamus. The gray matter forming the anterior portion of the brain stem.

Thematic Apperception Test. A test which includes several black and white pictures to which the subject reacts by giving associations to them.

Tic. Spasmodic twitching of a small group of muscles, especially of the face.

Tonic. Pertaining to tonus, or continued contraction of a muscle.

Tonus. A state of partial contraction of the muscle.

Transference. The displacement of emotional attitude during the course of psychotherapy so that the emotion previously attached to a repressed complex is freed from the complex and becomes attached to the clinician.

Trauma. An injury.

Traumatic neurosis. A neurosis developing immediately following a severe injury or stress.

Tremor. A continuous muscular spasm of limited extent.

Tympanic membrane. The membrane between the outer ear canal and the middle ear; the eardrum.

Unilateral. One-sided.

Unsystematized delusion. A loosely held-together delusion, not maintaining any reasonable consistency.

Uterus. Organ in female mammals for carrying and nourishing the young before birth; womb.

Vagrant. A person who moves from place to place without a usually-acceptable reason.

Verbigeration. A senseless and prolonged repetition of words or phrases.

Vicarious. Acting for or in place of another.

Visceral. Pertaining to internal organs.

Voyeur. One who gains erotic pleasure from viewing sexual objects.
A "peeping Tom."

Wanderlust. Nomadism; the irresistible impulse to go about from place to place.

Withdrawal. Retreat.

SUBJECT INDEX

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not indexed)

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